1. Corpus cavernosal smooth muscle relaxation caused by nitric oxide is mediated through increased intracellular levels of:

   A. cyclic GMP.
   B. calcium.
   C. acetylcholine.
   D. vasoactive intestinal polypeptide.
   E. cyclic AMP.

2. Cystic fibrosis is associated with infertility as a result of:

   A. acrosome absence.
   B. necrospermia.
   C. absence of the caput epididymis.
   D. absence of the vas deferens.
   E. ejaculatory duct obstruction.

3. A 55-year-old man with a ten pound weight loss has a T3 (C) prostate nodule. Transrectal biopsy reveals small cell carcinoma. Metastatic workup is negative. The best management is:

   A. radical prostatectomy.
   B. LH-RH agonist.
   C. cystoprostatectomy.
   D. external beam radiotherapy.
   E. chemotherapy.

4. The etiology of erectile dysfunction that responds best to intracavernosal injection of vasoactive agents is:

   A. neurogenic.
   B. arteriogenic.
   C. hypogonadism.
   D. venoocclusive dysfunction.
   E. post-radiation.

5. A 42-year-old man has chronic right epididymal and testicular pain for one year after vasectomy that limits his ability to work. Color Doppler ultrasound shows no evidence of inflammation or altered vascularity. He has not responded to antidepressant, NSAIDS, antibiotic therapy, or ilioinguinal nerve blocks or local vasal injections. Abdominal and pelvic CT scan and lumbosacral MRI scan are normal. He has relief after blinded injection of the spermatic cord with 1% lidocaine, but not after blinded injection with saline. He has not responded to stress reduction psychotherapy. The next step is:

   A. orchiectomy.
   B. reversal of vasectomy.
   C. epididymectomy.
   D. microsurgical cord denervation.
   E. phenol injection of the spermatic cord.

6. A 75-year-old hypertensive woman has left flank pain. CT scan reveals a 14 cm left renal mass with a 2.5 cm para-aortic lymph node. Percutaneous biopsy of the renal mass reveals leiomyosarcoma. Metastatic evaluation is negative. Optimal therapy is:

   A. doxorubicin-based chemotherapy.
   B. radical nephrectomy and lymphadenectomy.
   C. radical nephrectomy, lymphadenectomy, and external beam radiotherapy.
   D. external beam radiotherapy.
   E. radical nephrectomy, lymphadenectomy, and adjuvant chemotherapy.

7. The oral medication most likely to cause priapism is:

   A. apomorphine.
   B. yohimbine.
   C. sildenafil.
   D. trazodone.
   E. clomipramine.

8. A 35-year-old man has gross hematuria. CT scan shows a non-calcified renal pelvic lesion that does not enhance. MRI scan shows a hyperintense signal on T2 image and hypointense T1 image that does not enhance with gadolinium. Urinalysis demonstrated many RBCs and rare WBCs. Urine culture grew 10^5 cfu/ml of Proteus mirabilis, and urine cytology revealed atypia. The most likely diagnosis is:

   A. fungus ball.
   B. matrix stone.
   C. low grade TCC.
   D. papillary necrosis.
   E. blood clot.

9. A 72-year-old man with a large renal cell carcinoma has right hip pain. Bone scan shows multiple metastases and plain films of the right femur show a 4.0 cm lytic lesion. The next step is:

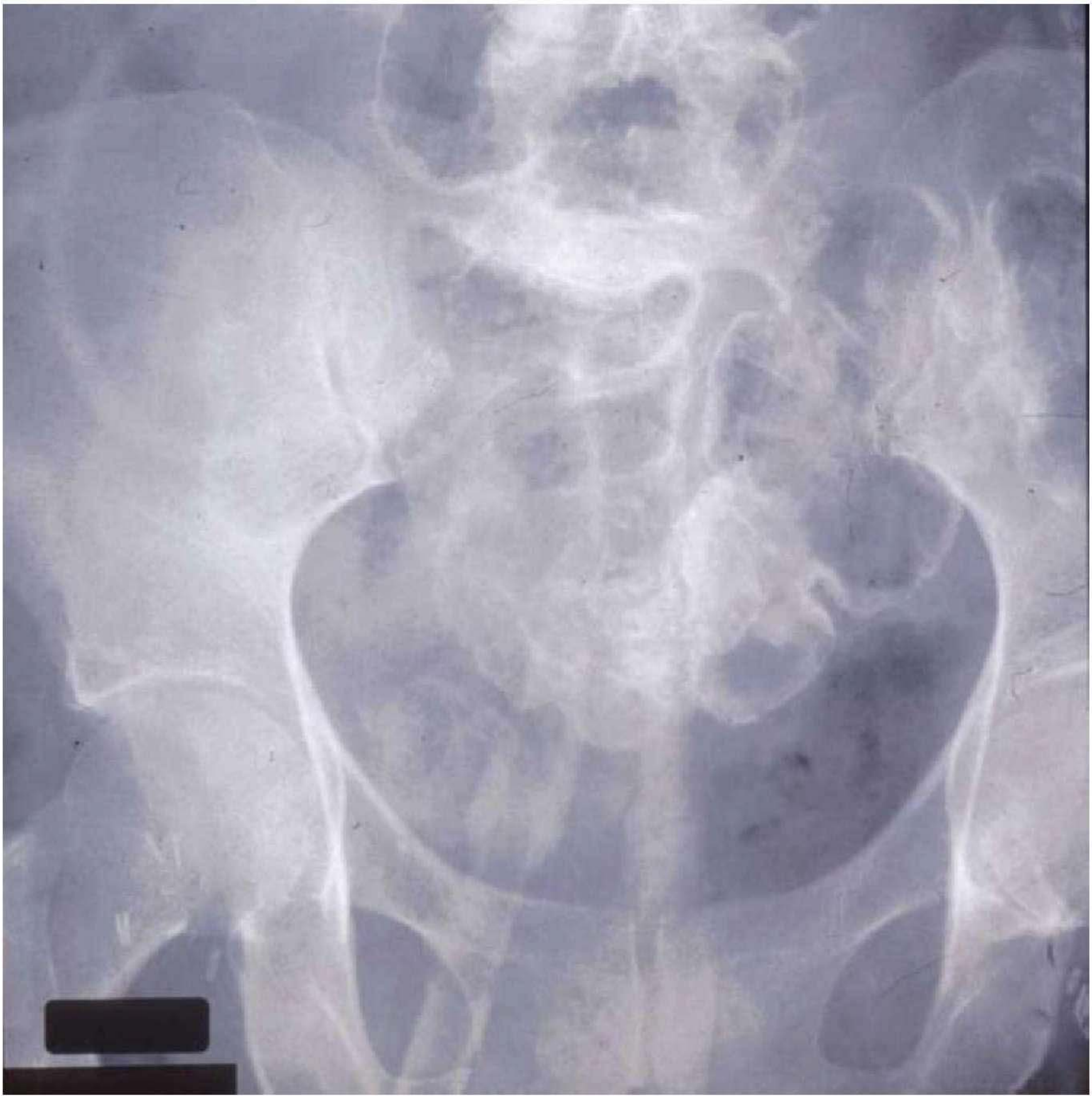
   A. external beam radiation therapy to the femur.
   B. strontium-89.
   C. open stabilization of the femur.
   D. chemotherapy.
   E. immunotherapy.

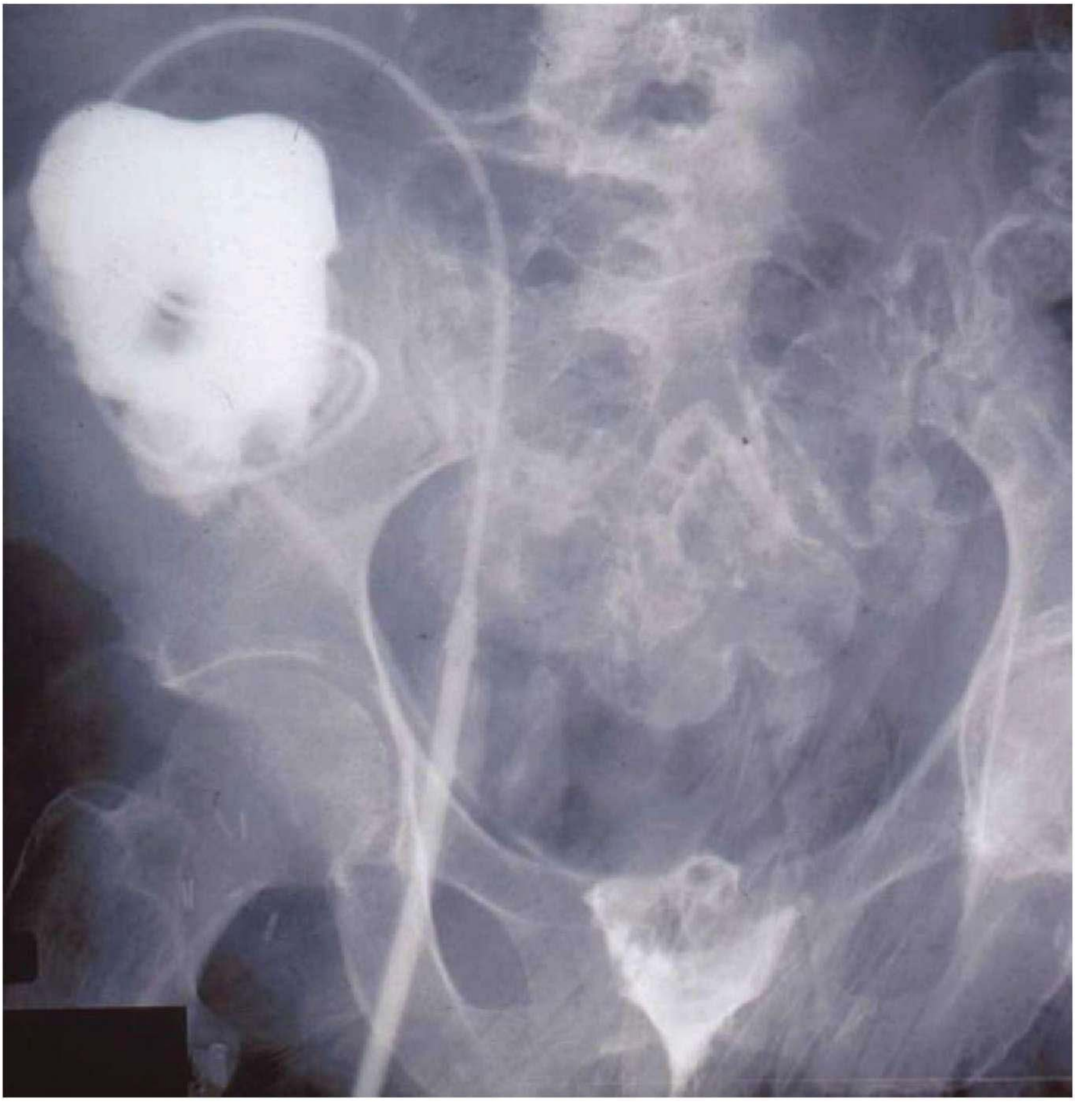
10. Phosphodiesterase type 5 inhibitor therapy is most efficacious in treating female sexual dysfunction associated with:

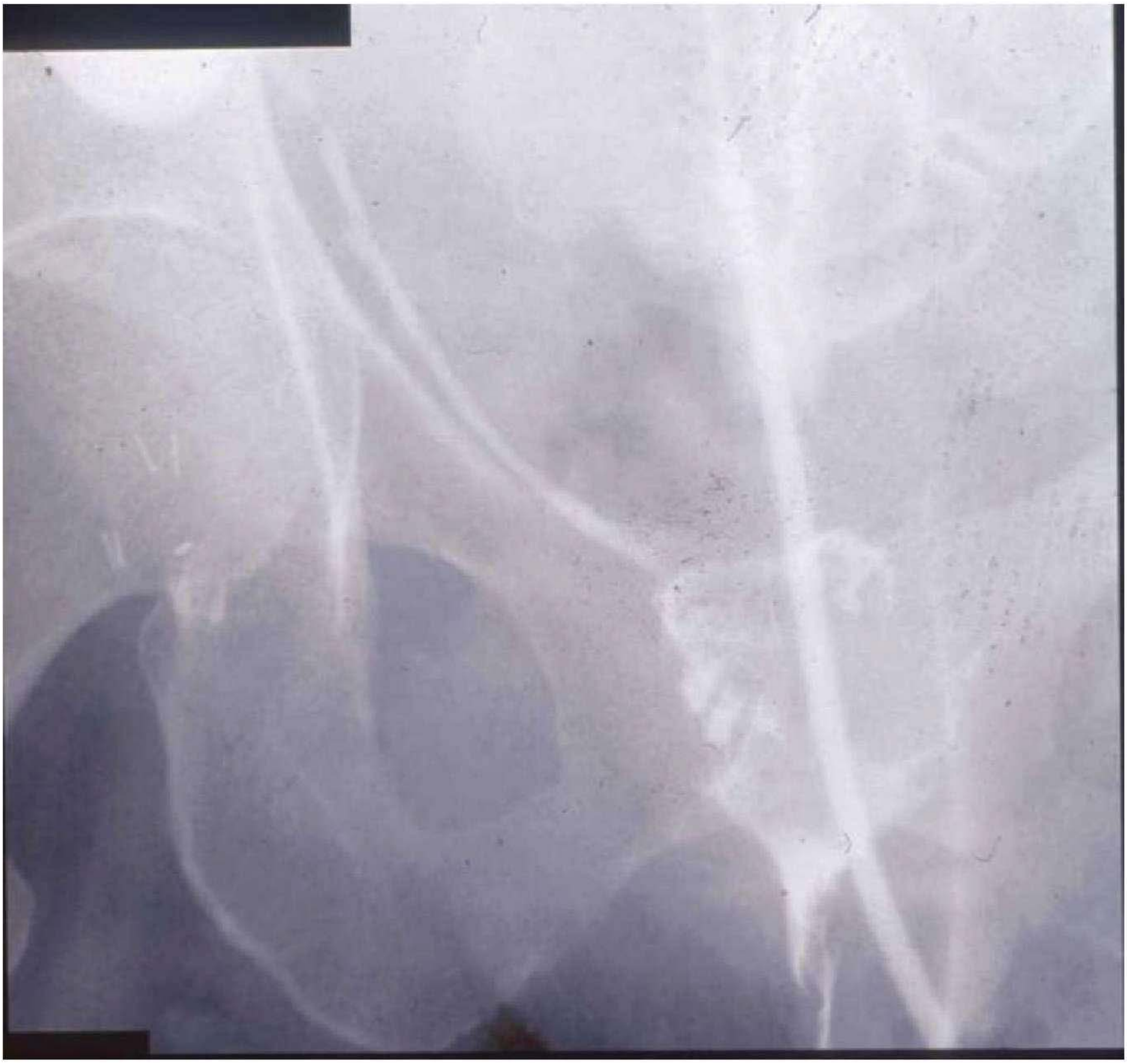
   A. oophorectomy.
   B. hysterectomy.
   C. multiple sclerosis.
   D. vulvodynia.
   E. selective serotonin reuptake inhibitor use.

11. A 55-year-old woman with a history of radiation therapy for cervical carcinoma develops vaginal drainage six months after radical cystectomy and Indiana pouch for TCC of the bladder. She catheterizes the pouch without difficulty and there is no leakage from the efferent limb. A pouchogram is shown in the exhibits. The next step is:

A. low residue diet.
B. continuous catheter drainage of the pouch.
C. vaginal repair with Martius flap.
D. transabdominal repair with omental interposition.
E. convert to ileal conduit.







12. A 50-year-old woman has acute left flank pain. Her hemoglobin is 7 gm/dl, and creatinine 1.2 mg/dl. CT scan shows a 15 cm lower-pole left renal mass and a large perinephric hematoma. There are low-density areas (Hounsfield units of -30) within the mass. After transfusion, the next step is:

A. observation.
B. selective angiographic embolization.
C. radical nephrectomy.
D. partial nephrectomy.
E. radio frequency ablation.

13. The intracavernosal vasoactive agent trimix (papaverine /phentolamine/ prostaglandin E_1) functions through which of the following mechanisms:

A. phosphodiesterase inhibition/ alpha-adrenergic blockade/ increase in cAMP levels.
B. phosphodiesterase inhibition/ alpha-adrenergic blockade/ nitric oxide synthesis.
C. phosphodiesterase inhibition/ alpha-adrenergic blockade/ rho-kinase inhibition.
D. rho-kinase inhibition / alpha-adrenergic agonism/ increase in cAMP levels.
E. beta-adrenergic agonist/ alpha-adrenergic blockade/ increase in cGMP levels.

14. A 55-year-old diabetic woman has left flank pain, malaise, and weight loss. Her temperature is 102° F. Renal ultrasound demonstrates an enlarged left kidney with calcifications. The most common organism associated with this condition is:

A. Pseudomonas.
B. Proteus.
C. Klebsiella.
D. Enterococcus.
E. E. coli.

15. A 19-year-old hypertensive man with intermittent gross hematuria has a 12 cm solid lower pole right renal mass demonstrated on CT scan. Contralateral renal function is normal, and there is no evidence of metastatic disease. The next step is:

A. renal arteriogram.
B. CT-guided needle biopsy of the mass.
C. venacavogram with renin determinations.
D. partial nephrectomy.
E. radical nephrectomy.

16. Which statement concerning the International Index of Erectile Function (IIEF) questionnaire is correct:

A. a score of greater than 24 indicates the absence of erectile dysfunction.
B. a score of less than or equal to 10 indicates severe erectile dysfunction.
C. the questionnaire has domains addressing patient and partner satisfaction.
D. a clinically meaningful change is defined as a 2-point improvement in each question.
E. each question is scored on a 10-point scale.

17. The intervention that will reduce renal pelvic pressure during ureteroscopy is:

A. administration of ketorolac.
B. administration of I.V. mannitol.
C. use a smaller caliber ureteroscope.
D. use a ureteral access sheath.
E. use a constant-flow automated irrigation pump.

18. A 55-year-old man undergoes a left lower pole partial nephrectomy for a 3.5 cm solid renal mass. The contralateral kidney is normal. Two days postoperatively, his serum hematocrit drops from 32% to 23% over 24 hours. Urine is dark burgundy in color. Vital signs are stable. The next step is:

A. angiography and embolization of bleeding vessels.
B. reoperation with suture ligation of bleeding vessels.
C. reoperation with nephrectomy.
D. bedrest, serial monitoring, and transfusions as needed.
E. ureteral stent placement.

19. The combination of detrusor areflexia and impotence is most apt to occur following:

A. radiation for prostate cancer invading the bladder base.
B. proctocolectomy for ulcerative colitis.
C. bilateral renal transplantation to the hypogastric arteries.
D. abdominal perineal resection for rectal cancer.
E. radical perineal prostatectomy for prostate cancer.

20. A 46-year-old woman has known tuberculosis and new onset hematuria. CT scan demonstrates a poorly functioning upper pole of the right kidney with an upper pole fluid collection. The left kidney is normal. The best treatment is:

A. ureteral stent.
B. immediate right upper pole nephrectomy.
C. right upper pole nephrectomy following six weeks of antituberculous therapy.
D. antituberculous therapy with close radiographic follow-up.
E. immediate right simple nephrectomy.

21. A 60-year-old-man undergoes percutaneous drainage of a lymphocele three weeks following radical prostatectomy. Three weeks later he has continued drain output, fever, and leukocytosis despite oral antibiotics. A repeat CT scan shows incomplete drainage. The next step is:

A. observation.
B. sclerotherapy.
C. intravenous antibiotics.
D. place another percutaneous drain.
E. laparoscopic unroofing.

22. An asymptomatic 52-year-old man wishes to donate a kidney to his HLA-identical sister. Urinalysis is normal and his serum creatinine is 0.9 mg/dl. CT scan reveals a normal right kidney and a left ureteropelvic junction obstruction with well-preserved cortex. The next step is:

A. exclude from donation.
B. right donor nephrectomy.
C. endopyelotomy with delayed left donor nephrectomy.
D. left donor nephrectomy with dismembered pyeloplasty.
E. left donor nephrectomy with native ureteropyelostomy.

23. A 38-year-old woman has intermittent dull right flank pain. Urinalysis demonstrates a pH of 5.5 and microhematuria. A KUB suggests a 1.4 cm slightly opaque right lower pole renal stone. A CT scan confirms a stone with an attenuation coefficient of 225 Hounsfield units. There is no hydronephrosis. The next step is:

A. observation.
B. potassium citrate.
C. SWL.
D. ureteroscopic laser lithotripsy.
E. percutaneous nephrolithotomy.

24. A 70-year-old man with a long history of LUTS on tamsulosin develops acute urinary retention eleven days following cryosurgery for clinical T2, Gleason 6 prostate cancer. The next step is bladder drainage and:

A. TURP.
B. prostatic stent.
C. leuprolide acetate.
D. finasteride.
E. observation.

25. A 30-year-old woman wishes to become pregnant following renal transplantation. Her serum creatinine is 1.2 mg/dl. She should be counseled that pregnancy will likely be associated with:

A. fetal genetic abnormality.
B. preterm delivery.
C. allograft rejection.
D. preeclampsia.
E. intrauterine growth retardation.

26. During metabolic stone evaluation, a 35-year-old man has a urine pH of 5.45 and total urinary uric acid of 368 mg/day (normal < 650 mg/day). His urinary uric acid level rises to 1079 mg/day after one month of potassium citrate therapy. The rise in his urinary uric acid level is due to:

A. increased dietary purine intake.
B. increased purine turnover.
C. increased production of endogenous uric acid.
D. resuspension of urinary uric acid.
E. inhibition of xanthine oxidase.

27. A 52-year-old man has a radical prostatectomy with final pathology showing Gleason 8 adenocarcinoma with left seminal vesical invasion but negative surgical margins and lymph nodes. PSA at three months is < 0.1 ng/ml, but at six months it is 0.6 ng/ml and two months later it is 1.2 ng/ml. The next step is:

A. observation.
B. radiation therapy.
C. leuprolide.
D. bicalutamide.
E. chemotherapy.

28. A 42-year-old woman has gross hematuria and graft tenderness one year after cadaveric renal transplantation. Serum creatinine is 7.9 mg/dl and renal biopsy shows severe fibrosis. Color doppler ultrasound reveals minimal allograft blood flow. Immunosuppression has been tacrolimus, mycophenolate mofetil, and steroids. The next step is:

A. discontinue tacrolimus, repeat biopsy in one week.
B. steroid bolus, repeat biopsy in one week.
C. cystoscopy.
D. renal arteriography.
E. allograft nephrectomy.

29. The primary cause of uric acid stone formation in patients with an ileostomy is:

A. dehydration.
B. hyperuricemia.
C. high urinary pH.
D. hyperuricosuria.
E. malabsorption.

30. A 57-year-old man has persistent urinary leak of 1500 ml/day from his closed suction pelvic drain five days following a laparoscopic radical prostatectomy. His Foley catheter remains in the bladder. A cystogram shows extravasation at the anastomosis and the drains are adjacent to this area. The next step is:

A. revise anastomosis.
B. suprapubic cystostomy.
C. advance drain and discontinue suction.
D. remove drain.
E. bilateral nephrostomies.

31. A 21-year-old man with cafe-au-lait spots and cutaneous fibrous tumors is hypertensive three years after excision of a cerebellar hemangioma. The most likely cause of his elevated blood pressure is:

A. primary hyperaldosteronism.
B. essential hypertension.
C. adrenal cortical carcinoma.
D. renal artery stenosis.
E. juxtaglomerular cell tumor.

32. Non-dilated obstructive uropathy is most commonly associated with:

A. diabetes insipidus.
B. psychogenic polydipsia.
C. vesicoureteral reflux.
D. retroperitoneal fibrosis.
E. acute pyelonephritis.

33. A 57-year-old man has recurrent calcium oxalate monohydrate and uric acid stones. The underlying metabolic abnormality can best be determined with:

A. urine pH.
B. serum uric acid.
C. urinary uric acid crystals.
D. 24-hour urinary uric acid.
E. sodium nitroprusside test.

34. A 28-year-old man with quadriparesis following transverse myelitis has episodic hypertension, headache, and nausea. His bladder is drained via suprapubic catheter. The best diagnostic test is:

A. 24-hour urine VMA.
B. plasma catecholamines.
C. CMG with blood pressure monitoring.
D. clonidine suppression test.
E. trial of CIC.

35. A 50-year-old African American woman has passed multiple calcium oxalate dihydrate stones. On allopurinol and potassium citrate, repeat metabolic evaluation demonstrates serum calcium of 13.4 mg/dl, phosphorus 3.7 mg/dl, intact PTH 10 pg/dl (normal < 65 pg/ml), and urinary calcium of 598 mg/day (normal < 250 mg/day). The next step is:

A. neck exploration.
B. abdominal CT scan.
C. calcium load test.
D. chest CT scan.
E. fasting urinary calcium.

36. A 48-year-old woman develops a vesicovaginal fistula five days after vaginal hysterectomy. Cystoscopy shows a small area of erythema just proximal to the trigone. Bilateral retrograde pyelograms are normal. Although vaginal leakage of urine persists, the majority of urine is voided normally. The next step is:

A. fulgurate fistula.
B. bilateral externalized ureteral stents.
C. immediate fistula repair.
D. Foley catheter.
E. suprapubic cystostomy.

37. Following the removal of a frontal lobe meningioma, detrusor function will most likely be:

A. coordinated with urge incontinence.
B. coordinated but with increased residual urine.
C. uncoordinated due to detrusor-sphincter dyssynergia.
D. uncoordinated due to detrusor areflexia.
E. uncoordinated due to primary bladder neck dyssynergia.

38. The initial nephrostomy tube puncture site in a horseshoe kidney compared to that in a normally positioned kidney is more:

A. medial and through a posterior calyx.
B. lateral and through an anterior calyx.
C. medial and through an anterior calyx.
D. lateral and through a posterior calyx.
E. inferior and through an anterior calyx.

39. During transvaginal repair of a high vesicovaginal fistula, a Martius flap is harvested, but is of insufficient length to reach the fistula site. The next step is:

A. myocutaneous gracilis flap.
B. gluteal flap.
C. omentum.
D. peritoneal flap.
E. myocutaneous labial flap.

40. A 22-year-old incontinent man with a complete C-7 spinal injury has a residual urine of 200 ml six months after a sphincterotomy. Repeated urine cultures are negative. Renal ultrasound is normal. A pressure-flow study shows a maximum voiding pressure of 18 cm H_2O with a peak flow of 10 ml/sec. VCUG shows no VUR but a narrow bladder neck. The best management is:

A. resection of the bladder neck.
B. repeat sphincterotomy.
C. bethanechol and phenoxybenzamine.
D. condom catheter drainage.
E. CIC.

41. The treatment that will most likely reduce stone formation in a patient with recurrent nephrolithiasis due to distal renal tubular acidosis is:

A. thiazide diuretics.
B. sodium bicarbonate.
C. potassium citrate.
D. pyridoxine.
E. orthophosphates.

42. A newborn boy had prenatal bilateral hydroureteronephrosis. Postnatal ultrasound reveals bilateral moderate caliectasis and markedly dilated ureters. Serum creatinine is 0.4 mg/dl. VCUG is normal. A diuretic renogram shows prompt uptake of radionuclide, but the washout is indeterminate. The next step is:

A. pressure perfusion (Whitaker) test.
B. ureteral reimplantation with tailoring.
C. temporary cutaneous ureterostomies.
D. observation.
E. prophylactic antibiotics.

43. A 39-year-old healthy woman has urinary urgency. Pelvic exam is normal. Pressure-flow study reveals a detrusor pressure of 25 cm H_2O with a flow of 5 ml/sec. The most likely diagnosis is:

A. normal voiding status.
B. overactive bladder.
C. primary bladder neck obstruction.
D. urethral syndrome.
E. intrinsic sphincter deficiency.

44. A 25-year-old man with AIDS has chills, fever, urinary frequency and dysuria. Urine culture demonstrates 10^5 colonies/ml of Candida albicans. CT scan is normal. The next step is:

A. I.V. amphotericin B.
B. bladder irrigation with amphotericin B.
C. oral flucytosine.
D. oral fluconazole.
E. oral ketoconazole.

45. A patient with an ileal conduit urinary diversion is undergoing renal function tests. The parameter that can be most accurately measured is:

A. creatinine clearance.
B. urinary concentrating ability.
C. fractional excretion of sodium.
D. acid loading.
E. proteinuria.

46. A 53-year-old man has mild lower urinary tract symptoms. The appropriate initial evaluation includes focused history and physical exam, AUA Symptom Score, urinalysis and:

A. postvoid residual.
B. serum creatinine.
C. PSA.
D. PSA and uroflow.
E. PSA and videourodynamics.

47. A 25-year-old college student has penile pain, burning and itching during erection, and difficulty retracting the foreskin. Examination reveals a whitish plaque on the foreskin, and a smaller, similar lesion on the ventral glans adjacent to the coronal sulcus. Pathology from a circumcision reveals balanitis xerotica obliterans (BXO). The next step is:

A. topical 5-FU.
B. abdominal and pelvic CT scan.
C. urethroscopy and retrograde pyelography.
D. excise glans lesion and reconstruction.
E. topical application of triamcinolone.

48. The hormone that is synthesized in the zona glomerulosa of the adrenal cortex is:

A. androstenedione.
B. cortisol.
C. aldosterone.
D. dihydrotestosterone.
E. 11-deoxycorticosterone.

49. A 64-year-old man had a TURP six months ago and has an International Prostate Symptom Score (IPSS) of 5. He has persistent gross hematuria requiring cystoscopy and clot evacuation. Friable prostatic tissue was noted during cystoscopy. He does not wish to undergo further surgical treatment. The next step is:

A. terazosin.
B. finasteride.
C. terazosin and finasteride.
D. abarelix.
E. saw palmetto.

50. Cranberry juice may help prevent UTI by reducing:

A. urine pH.
B. urine osmolality.
C. secretory IgA.
D. bacterial adhesion.
E. interleukin 6 (IL-6).

51. Patients on chronic hemodialysis may have a tendency to bleed excessively during surgery. This is due to:

A. thrombocytopenia.
B. inadequate levels of Vitamin K.
C. hypofibrinogenemia.
D. thromboplastin deficiency.
E. a qualitative platelet defect.

52. A 72-year-old woman has nocturia x 2, without bothersome urinary frequency or urgency. She has restricted evening fluid intake. Her measured voided volumes at night range between 300 to 400 ml. Physical examination, urinalysis, urine cytology, and postvoid residual determinations are normal. The next step is:

A. observation.
B. voiding diary.
C. anticholinergic therapy.
D. CMG.
E. cystourethroscopy.

53. A 64-year-old man has dysuria, frequency, and hematuria following removal of a urethral catheter after a hip replacement. He is allergic to penicillin. A urine culture at the time of catheter removal grew Enterococcus fecalis. The best treatment is:

A. cephalexin.
B. gentamicin.
C. norfloxacin.
D. clindamycin.
E. nitrofurantoin.

54. An infant girl has severe upper pole hydronephrosis with associated hydroureter. The renal parenchyma is thinned on ultrasound and the VCUG is normal. Urine can be seen dripping slowly from an ectopic orifice adjacent to the urethral meatus. In this child, the finding most predictive of poor function of the upper pole renal segment is:

A. parenchymal thickness.
B. degree of hydroureter.
C. degree of hydronephrosis.
D. age.
E. location of the orifice.

55. A 24-year-old man has a complete T-10 spinal cord transection after a diving accident. Videourodynamics three weeks after the injury will likely show:

A. detrusor areflexia.
B. detrusor hyperreflexia.
C. open bladder neck.
D. absent sphincter activity.
E. striated sphincter dyssynergia.

56. A 20-year-old woman has fever, mild headache, and urinary retention. Neurological examination is normal except for mildly decreased perineal sensation. Pelvic exam shows several painful vesicles on the left side of the rectum and the labia minora. The next step is:

A. spinal MRI scan.
B. cultures and serology for venereal disease.
C. Pap smear.
D. spinal tap.
E. cranial CT scan.

57. During exploration for an appendiceal abscess, the spermatic artery and vein are divided. Survival of the testis is dependent on blood supply from a branch of the:

A. obturator artery.
B. superior vesical artery.
C. inferior vesical artery.
D. posterior scrotal artery.
E. internal pudendal artery.

58. A 68-year-old woman has urge incontinence that requires three pads per day. She voids every two hours during the day and twice per night. Examination with a full bladder during cough reveals a Grade 2 cystourethrocele and mild stress incontinence. CMG reveals a stable bladder with a capacity of 250 cc. She voids to completion with a maximum flow rate of 26 ml/sec. The next step is:

A. oxybutynin.
B. cystogram.
C. videourodynamics.
D. sling.
E. ambulatory urodynamics.

59. A 39-year-old woman has dysuria and frequency. Urinalysis shows 30 WBC/hpf and a few cocci. The midstream urine culture shows 10^3 coagulase negative staphylococci/ml. The next step is:

A. phenazopyridine.
B. repeat midstream culture.
C. urine culture for mycobacteria.
D. antibiotic therapy.
E. catheterized urine culture.

60. The crura of the penis are composed of:

A. suspensory ligaments.
B. erectile tissue.
C. corpus spongiosum.
D. striated muscles.
E. fascia.

61. A 70-year-old woman has significant stress urinary incontinence. She underwent a transvaginal needle suspension three years ago and incontinence worsened after surgery. Her physical examination and urinalysis are normal. The abdominal leak point pressure is 38 cm H_2O. Fluoroscopy shows no evidence of urethral hypermobility. The next step is:

A. artificial urinary sphincter.
B. suprapubic bladder suspension.
C. collagen injection.
D. transvaginal bladder suspension.
E. biofeedback therapy.

62. A 39-year-old renal transplant patient has right scrotal pain, dysuria, and frequency. Creatinine is 1.0 mg/dl, WBC 8,000, and urine culture shows 80-100,000 CFU/ml of Enterococcus fecalis resistant to gentamicin, cephalosporins, vancomycin, and ciprofloxacin. Optimal outpatient antibiotic therapy is:

A. azithromycin.
B. TMP-SMX.
C. nitrofurantoin.
D. fosfomycin.
E. doxycycline.

63. The structure found immediately lateral to the femoral artery as it passes posterior to the inguinal ligament is the:

A. sartorius muscle.
B. femoral vein.
C. femoral nerve.
D. iliohypogastric nerve.
E. lateral femoral cutaneous nerve.

64. The most prominent pharmacologic effect of imipramine on the lower urinary tract is:

A. central nervous system excitation.
B. direct smooth muscle inhibition.
C. alpha-adrenergic blockade.
D. blockade of norepinephrine synthesis.
E. opioid antagonism.

65. Five days after intercourse, a 40-year-old man develops a painful necrotic penile ulcer and painful inguinal lymphadenopathy. Gram stain of an exudate from the lesion reveals gram-negative coccobacilli. Dark-field examination and Tzanck smears are negative. The treatment of choice is:

A. penicillin.
B. tetracycline.
C. acyclovir.
D. erythromycin.
E. sulfisoxazole.

66. The anatomical relationship of the left internal spermatic vein(s) to the left ureter in the retroperitoneum 2 cm above the internal inguinal ring is:

A. anterior and lateral.
B. anterior and medial.
C. posterior and lateral.
D. posterior and medial.
E. medial and adjacent.

67. A 77-year-old woman with frequency, urgency and urge incontinence is able to contract her pelvic muscles appropriately. She has failed to respond to three different anticholinergic medications including one in combination with imipramine. Urinalysis is normal. CMG shows detrusor overactivity. The next step is:

A. biofeedback.
B. pelvic floor rehabilitation with electrical stimulation.
C. transvesical phenol injection.
D. sacral neural modulation.
E. bladder augmentation.

68. Two grams of oral ascorbic acid (Vitamin C) per day will:

A. decrease urinary calcium.
B. increase urinary oxalate.
C. decrease urinary magnesium.
D. decrease urinary acidity.
E. decrease urinary citrate.

69. A ten-year-old girl with a history of bilateral high grade VUR was treated with bilateral cross-trigonal ureteral reimplantation surgery at two years of age. She is evaluated for gross hematuria and found to have nephrogenic adenomas of the bladder that are resected. The next step is:

A. reassurance.
B. antibiotic suppression.
C. intravesical BCG.
D. laser ablation.
E. partial cystectomy.

70. A 52-year-old woman has persistent left sided suprapubic pain six months following a bone anchored cadaveric sling. She is continent. CT scan shows that the left bone anchor is in good position in the pubis while the right anchor is not in bone. Bone scan is negative. The next step is:

A. non-steroidal anti-inflammatory drugs.
B. gabapentin (Neurontin).
C. remove the sling and sling sutures.
D. remove the sling and left bone anchor.
E. remove the sling and both bone anchors.

71. A 68-year-old diabetic man with symptomatic candiduria is hospitalized for treatment with I.V. amphotericin B. A recent renal ultrasound shows no hydronephrosis. Immediately after starting the amphotericin B, he develops rigors, chills, and fever. The next step is:

A. stop amphotericin B.
B. gentamicin and ampicillin.
C. repeat renal ultrasound.
D. ibuprofen or corticosteroids.
E. add flucytosine.

72. A four-year-old 15 kg boy with von Willebrand's disease undergoes nephrectomy after receiving I.V. desmopressin (DDAVP). Postoperative fluids were D5 1/2 NS at 65 cc/hr. He is disoriented one day postoperatively. Urine output over the past eight hours is 90 cc. He is afebrile, pulse is 90, and blood pressure is 90/66. The most likely cause of disorientation is:

A. sepsis.
B. hyponatremia.
C. hypoglycemia.
D. adrenal insufficiency.
E. postoperative hemorrhage.

73. A 22-year-old woman has incontinence. There is slight bladder neck hypermobility and a negative cough stress test. Urodynamics show a stable bladder and no demonstrable leakage with Valsalva to 250 cm of H_2O with 500 ml in the bladder. During a 24-hour pad test, there is an increase in pad weight of 2 grams. The next step is:

A. repeat pad test ensuring that the patient does her usual activities.
B. retest for stress incontinence at higher volumes.
C. biofeedback.
D. cystoscopy.
E. midurethral synthetic sling.

74. The antimicrobial agent that can be used at the usual dosage in an azotemic patient is:

A. nitrofurantoin.
B. sulfamethoxazole.
C. doxycycline.
D. trimethoprim.
E. fluconazole.

75. A 56-year-old man has a prolonged ileus requiring nasogastric suction following radical cystectomy and ileal conduit. On the tenth post-operative day, he has a seizure. The most likely cause of the seizure is reduced:

A. calcium.
B. magnesium.
C. potassium.
D. phosphate.
E. sodium.

76. An asymptomatic, 65 kg man with a serum creatinine of 2.0 mg/dl is evaluated for recurrent renal calculi. A 24-hour urinary creatinine measurement is 0.5 gm. This finding is most consistent with:

A. an incomplete collection.
B. low protein diet.
C. hydrochlorothiazide therapy.
D. resolving renal insufficiency.
E. unilateral obstruction.

77. A 25-year-old man with clinical stage IIC NSGCT had a left scrotal orchiectomy before full-dose platinum-based chemotherapy. After the chemotherapy, he has a residual 3 cm para-aortic mass. In addition to a RPLND, treatment should include:

A. wide excision of the scrotal scar.
B. wide excision of the scrotal scar and removal of the spermatic cord remnant.
C. removal of the spermatic cord remnant.
D. hemiscrotectomy and removal of spermatic cord remnant.
E. hemiscrotectomy, removal of the spermatic cord remnant and ipsilateral ilioinguinal node dissection.

78. A one-month-old boy undergoes left radical orchiectomy for an endodermal sinus (yolk sac) tumor. Chest and abdominal CT scans are normal. Preoperative AFP is 2600 ng/dl, and postoperative levels at one and two months are 330 and 90 ng/dl (normal < 10 ng/dl). The next step is:

A. bone scan.
B. ultrasound of right testis.
C. multiagent chemotherapy.
D. RPLND.
E. repeat AFP in one month.

79. The drug that can result in an elevation of BUN without affecting glomerular filtration rate is:

A. tetracycline.
B. erythromycin.
C. methicillin.
D. cephalexin.
E. furosemide.

80. A 25-year-old man has right testicular pain. Physical examination is normal. Testicular ultrasound reveals bilateral diffuse hyperechoic 1 to 2 mm foci. The best management is:

A. testicular biopsy.
B. right radical orchiectomy.
C. chromosomal analysis.
D. surveillance.
E. bilateral low-dose testicular radiation.

81. A ten-month-old girl undergoes left nephrectomy for Wilms' tumor. The right kidney is normal at the time of surgery. Pathology reveals the presence of perilobar nephrogenic rests. She is at increased risk for:

A. nephrotic syndrome.
B. renal failure.
C. metachronous Wilms' tumor.
D. local recurrence.
E. metastatic disease.

82. The clearance of low molecular weight heparin (enoxaparin) is markedly reduced in patients with:

A. renal insufficiency.
B. hypoalbuminemia.
C. jaundice.
D. viral hepatitis.
E. bowel obstruction.

83. A 65-year-old man is treated with goserelin acetate and bicalutamide for a rising serum PSA following definitive radiation therapy for Gleason 8 prostate cancer. Bone scan and CT scan are negative. In addition to the hormone therapy, he should have annual bone density scans and:

A. observation.
B. monthly zoledronate (Zometa).
C. weekly alendronate (Fosamax).
D. calcium and Vitamin D supplements.
E. medroxyprogesterone (Megace).

84. Two physiologic factors contributing to post-obstructive diuresis are a renal concentrating defect and:

A. resistance to atrial natriuretic factor.
B. secretion of ADH.
C. increased chloride reabsorption.
D. increased sodium reabsorption.
E. osmotic diuresis.

85. An 81-year-old woman with nocturnal enuresis is treated with desmopressin. After three nights of treatment she is lethargic and hyponatremic. The next step is:

A. reduce the dose of desmopressin.
B. stop desmopressin.
C. increase dietary sodium.
D. limit fluid intake at night.
E. start hydrochlorothiazide.

86. A 26-year-man undergoes orchiectomy for seminoma. Abdominal CT scan and tumor markers are negative. He elects surveillance. The most accurate statement regarding his outcome over the next two years is:

A. 5% risk of visceral relapse.
B. similar to patients treated with radiation therapy.
C. 40% risk of relapse with non-seminomatous elements.
D. 15% risk of retroperitoneal relapse.
E. 50% risk of pulmonary relapse.

87. The agent that produces a diuresis by inhibiting the release of vasopressin (ADH) from the central nervous system is:

A. hydrochlorothiazide.
B. lithium.
C. methoxyflurane.
D. furosemide.
E. alcohol.

88. Alpha-1-blockers relax prostatic smooth muscle and:

A. relax the distal urethral sphincter.
B. induce prostate apoptosis.
C. decrease prostate size.
D. improve bladder contractility.
E. decrease prostate cell proliferation.

89. A 28-year-old man undergoes a right radical orchiectomy for pure seminoma. The serum AFP and hCG are normal, and an abdominal CT scan reveals a 4 cm mass in the interaortocaval region. Chest CT scan reveals three nodules at the base of the right lung. The best management is:

A. needle biopsy of pulmonary nodules.
B. radiation to the retroperitoneum and chest.
C. RPLND followed by chemotherapy.
D. RPLND and chest radiation.
E. chemotherapy.

90. A 30 kg girl with renal failure and nephrotic syndrome undergoes pre-transplant bilateral nephrectomies. Her initial post operative fluid management should be:

A. D5 1/4 NS at 25 cc/hr.
B. D5 1/4 NS at 100 cc/hr.
C. D5 1/2 NS with 40 mEq/l KCL at 70 cc/hr.
D. D5W with one amp $NaHCO_3$/l at 100 cc/hr.
E. D5W at TKO (to keep open).

91. Aldosterone production is primarily:

A. a function of the zona fasciculata.
B. increased by atrial natriuretic factor.
C. decreased in renal hypoperfusion.
D. mediated by angiotensin II.
E. increased with sodium loading.

92. A 22-year-old man with congenital adrenal hyperplasia has bilateral testicular masses. The next step is:

A. serum ACTH and cortisol.
B. serum LH and testosterone.
C. pituitary MRI scan.
D. percutaneous testis biopsy.
E. bilateral excisional biopsies.

93. Nephrocalcinosis and/or renal calculi that occur in pre-term infants on diuretics:

A. is usually unrelated to hypercalciuria.
B. usually leads to chronic renal failure.
C. is often associated with aminoaciduria.
D. may completely disappear.
E. usually accompanies obstructive uropathy.

94. Calcium reabsorption in the kidney is stimulated by:

A. acidosis.
B. intravascular volume expansion.
C. parathyroid hormone.
D. phosphate depletion.
E. furosemide administration.

95. The treatment of choice for symptomatic multifocal hemangiomas of the bladder is:

A. external radiation.
B. alum instillation.
C. simple cystectomy.
D. TUR and fulguration.
E. KTP laser.

96. A nine-year-old boy has microscopic hematuria after a bicycle accident. VCUG is normal except for spina bifida occulta. Renal ultrasound and voiding pattern are normal. The next step is:

A. neurologic consultation.
B. MRI scan of the lower spine.
C. urodynamic evaluation.
D. reassurance.
E. EMG testing.

97. Bilateral orchiectomy most consistently alters:

A. libido.
B. erection.
C. ejaculation.
D. serum prolactin.
E. seminal emission.

98. A 45-year-old man with recurrent Ta Grade II tumors undergoes resection of multifocal recurrences. A single postresection dose of an intravesical agent will be administered. In the immediate post-operative period, the agent of choice is:

A. mitomycin C.
B. alpha-interferon.
C. BCG.
D. gemcitabine.
E. keyhole limpet hemocyanin.

99. A three-year-old girl has normal external genitalia and an absent vagina. Her chromosomes are 46 XY. The most common associated finding is:

A. unilateral gonadal agenesis.
B. tethered spinal cord.
C. unilateral renal agenesis.
D. inguinal hernia.
E. VUR.

100. Bladder relaxation during filling is accomplished by:

A. stimulation of beta-3 adrenergic receptors via the hypogastric nerve.
B. stimulation of alpha-1 d receptors via the hypogastric nerve.
C. stimulation of alpha-1 a receptors via the hypogastric nerve.
D. inhibition of sympathetic input from the spinal cord.
E. inhibition of nicotinic receptors via the pelvic nerve.

101. Compared with urinary cytology, urine fluorescence in-situ hybridization (FISH) testing provides:

A. rapid point-of-service testing.
B. improved sensitivity.
C. improved specificity.
D. decreased cost.
E. detection of tumor mucin antigens.

102. A 10-year-old boy with a neurogenic bladder managed with CIC has normal upper urinary tracts. He has had asymptomatic bacteriuria on multiple occasions. Starting prophylactic antibiotics will likely:

A. result in resistant organisms.
B. have no effect on urinary bacteria.
C. significantly decrease the frequency of bacteriuria.
D. lead to fewer symptomatic infections.
E. decrease the risk of stone formation.

103. The receptor afferent fibers that account for nociception in response to neuropathic and possibly inflammatory bladder conditions are termed:

A. A-delta myelinated "volume".
B. A-delta myelinated "tension".
C. A-delta myelinated "silent".
D. C-unmyelinated "volume".
E. C-unmyelinated "silent".

104. A 67-year-old man with a history of six weekly BCG treatments undergoes 4 cycles of MVAC for a muscle invasive TCC (T3bNXMO) at the bladder neck. Following chemotherapy, there is no visible tumor although the urine cytology is positive. The next step is:

A. cystoscopy in three months.
B. repeat six weeks of BCG.
C. maintenance BCG.
D. radiation therapy.
E. radical cystoprostatectomy.

105. Sacral agenesis in the neonate is most closely associated with which maternal factor:

A. advanced age.
B. sacral agenesis.
C. insulin dependence.
D. folic acid deficiency.
E. first trimester use of contraceptive pills.

106. A 55-year-old obese man undergoes a prolonged radical nephrectomy via a flank approach. He received two units of PRBC intraoperatively. He has 100 ml of brownish urine during the first three hours after surgery. Vital signs and serum troponin are normal. Serum potassium is 6.5 mEq/l and the CPK is twice normal. Dipstick urinalysis is strongly positive for blood and the microscopic analysis reveals 1 RBC and 2 WBC/hpf. The oliguria is due to:

A. myoglobin nephrotoxicity.
B. myocardial infarction.
C. transfusion reaction.
D. sepsis.
E. interstitial nephritis.

107. A 67-year-old man has left flank pain three weeks following radical cystectomy and orthotopic neobladder. His ureteral stents were removed one week after surgery. His urethral catheter remains in place. A CT scan demonstrates left hydronephrosis to the level of the neobladder. The next step is:

A. observation.
B. cystoscopy and retrograde ureteral stent.
C. nephrostomy tube and antegrade ureteral stent.
D. endoscopic incision of ureterointestinal anastomosis.
E. open revision of ureterointestinal anastomosis.

108. Antenatally discovered VUR differs from VUR discovered in older symptomatic children, because in antenatal VUR:

A. grades I - IV show mid-kidney scars.
B. function of the refluxing kidney is diminished.
C. severe damage is mostly in males.
D. kidney damage is usually left sided.
E. resolution rates are slower.

109. A 60-year-old man has renal insufficiency due to atherosclerotic renal artery disease. The most important prognostic factor for successful renal revascularization to preserve renal function is:

A. duration of hypertension.
B. proportion of sclerotic glomeruli on renal biopsy.
C. serum creatinine.
D. presence of collateral blood supply on angiography.
E. presence of renal artery occlusion.

110. Orthotopic neobladder reconstruction should not be performed in a woman undergoing anterior exenteration for bladder cancer in the setting of:

A. age older than 75.
B. positive pelvic lymph nodes.
C. recurrent UTIs.
D. bilateral hydroureteronephrosis.
E. tumor invasion of the anterior vaginal wall.

111. A six-year-old boy has persistent asymptomatic microhematuria. Urine calcium/creatinine ratio, serum creatinine, ASO, and C3 complement are normal. Renal and bladder ultrasound is normal. The next step is:

A. VCUG.
B. cystoscopy.
C. non-contrast CT scan.
D. urinalysis and blood pressure measurement in one year.
E. urine cytology.

112. A 19-year-old man sustained a gunshot wound to the abdomen from a high velocity military rifle. During exploration, a right ureteral laceration was identified 4.5 cm above the ureterovesical junction. The most appropriate repair of this injury is:

A. transureteroureterostomy.
B. ureteroureterostomy with spatulated anastomosis.
C. psoas hitch and ureteral reimplantation.
D. primary repair of the ureteral laceration with ureteral stent.
E. nephrostomy tube placement with delayed ileal ureter.

113. A 51-year-old man has an orthotopic ileal neobladder following a cystectomy for muscle invasive TCC. Eighteen months later, urine cytology is positive and biopsy of the urethral anastomosis reveals focal CIS. Biopsies of the distal urethra are negative. IVP is normal. The next step is:

A. BCG.
B. fulguration of membranous urethra.
C. radiation.
D. excise proximal urethra, reanastomosis.
E. urethrectomy and cutaneous diversion.

114. A one-week-old boy with prenatally diagnosed left hydronephrosis underwent a sonogram that showed moderate left hydronephrosis. The VCUG was normal. A MAG-3 diuretic renal scan should not be performed now since:

A. administration of radionuclide can be hazardous.
B. renal vascular resistance is diminished.
C. venous access is difficult.
D. restricted oral intake is not tolerated.
E. GFR is lower in the first week of life.

115. Urinary tract obstruction most likely to be associated with renin-dependent hypertension is:

A. intermittent.
B. acute unilateral.
C. acute bilateral.
D. chronic unilateral.
E. chronic bilateral.

116. When using a colon segment instead of ileum for urinary diversion:

A. bowel obstruction is more common.
B. electrolyte abnormalities are more common.
C. it is more difficult to reach the urethral stump for orthotopic reconstruction.
D. an antirefluxing anastomosis with tunneling is more difficult.
E. nutritional problems are less frequent.

117. The most important predisposing factor for candidemia in newborns is:

A. I.V. catheters.
B. steroid administration.
C. blood dyscrasia.
D. antibiotic therapy.
E. immunosuppressive therapy.

118. A 26-year-old man has progressive left flank pain 17 years after an open pyeloplasty. Diuretic renography reveals 28% function from his left kidney with delayed renal pelvic drainage ($T_{1/2}$ = 40 minutes). Retrograde ureterogram shows a 1 cm narrowing at the UPJ. The best treatment is:

A. balloon dilation.
B. endopyelotomy.
C. nephrectomy.
D. open pyeloplasty.
E. ureterocalycostomy.

119. A 62-year-old man develops bilateral hydronephrosis four years after radical cystectomy and ileal conduit for bladder cancer. Upon catheterizing the stoma, 100 cc of urine is obtained. The most likely cause of the hydronephrosis is:

A. stomal stenosis.
B. chronic ureteral reflux.
C. ureteral obstruction due to recurrent cancer.
D. ureteral obstruction due to fibrosis.
E. antiperistaltic orientation of conduit.

120. An eight-month-old child hospitalized for pyelonephritis has an oral temperature of 39^o C. The child weighs 8 kg. The appropriate acetaminophen dosage to manage the fever is:

A. 40 mg.
B. 80 mg.
C. 120 mg.
D. 160 mg.
E. 200 mg.

121. A 42-year-old woman undergoes left ureteroscopy for evaluation of unilateral gross hematuria. The procedure is uneventful, no source of hematuria is seen and no ureteral stent is placed. She received perioperative antibiotics. Twelve hours later, she has left flank pain and a temperature of 99^o F. An ultrasound shows moderate hydronephrosis. The ureter is not visualized. The next step is:

A. analgesics.
B. hydration and diuretics.
C. IVP.
D. ureteral stent.
E. percutaneous nephrostomy.

122. A 45-year-old woman has chronic indwelling polyurethane double-J stents for bilateral lower ureteral strictures from radiation therapy for cervical carcinoma. She experiences gross painless hematuria and cystoscopic examination reveals profuse bleeding from the right ureteral orifice. The next step is:

A. remove the right stent.
B. arteriogram.
C. abdominal CT scan.
D. exchange for softer stent.
E. exploratory laparotomy.

123. An 11-year-old boy has a swollen, ecchymotic scrotum three hours after being hit in the perineum. Urinalysis is normal. The next step is:

A. scrotal exploration.
B. isotope testicular scan.
C. Doppler scrotal ultrasound.
D. retrograde urethrogram.
E. scrotal elevation, ice, and bedrest.

124. The first renal function parameter impaired by ureteral obstruction is:

A. ammonia excretion.
B. bicarbonate reabsorption.
C. potassium excretion.
D. water reabsorption.
E. chloride reabsorption.

125. A 55-year-old man has a 6 cm solid lower pole right renal mass on CT scan. There is no adenopathy or venous involvement. The right adrenal and left kidney are normal. However, there is a 3 cm mass in the left adrenal gland that shows heterogeneous enhancement on T2-weighted MRI scan. Chest x-ray, bone scan and metabolic evaluation are normal. The next step is:

A. radical nephrectomy and postoperative immunotherapy.
B. radical nephrectomy and bilateral adrenalectomy with steroid replacement.
C. radical nephrectomy sparing right adrenal gland, and left adrenalectomy.
D. radical nephrectomy with biopsy of left adrenal gland.
E. immunotherapy followed by nephrectomy if a response is demonstrated.

126. A nine-year-old boy is in an MVA. He has right flank pain and has voided spontaneously. Urinalysis and vital signs are normal. Physical examination reveals a right flank contusion. Chest x-ray reveals a fracture of the right 12th rib. The next step is:

A. ultrasound.
B. CT scan.
C. observation.
D. IVP.
E. renal scan.

127. A 42-year-old infertile man has a semen volume of 2 ml, sperm density of 5 million/ml, and decreased sperm motility. Physical examination demonstrates a Grade III left varicocele and Grade I right varicocele. His partner's evaluation is normal. The next step is:

A. transrectal ultrasonography.
B. clomiphene citrate (Clomid).
C. intrauterine insemination.
D. left varicocelectomy.
E. bilateral varicocelectomy.

128. An 81-year-old man has an irregular, velvety red patch extending from the base of the penis onto the left hemiscrotum. Punch biopsy shows Paget's disease. Evaluation for occult malignancy is negative. Treatment should be:

A. external beam radiation.
B. topical 5-fluorouracil cream.
C. wide local excision with skin graft.
D. Moh's surgical excision.
E. penectomy with left scrotectomy.

129. A cutaneous vesicosotomy in infants results in:

A. continent urinary diversion.
B. effective drainage of the bladder.
C. bladder dysfunction from disuse.
D. increased risk of symptomatic UTI.
E. inability to void per-urethra.

130. A 58-year-old man has taken bicalutamide and finasteride for one month. Relative to pre-treatment levels, the following changes are expected:

	LH	**T**	**DHT**	**Estradiol**
A.	⇑	⇑	⇓	⇓
B.	⇑	⇑	⇑	⇑
C.	⇓	⇑	⇑	⇑
D.	⇑	⇓	⇓	⇓
E.	⇑	⇑	⇓	⇑

131. Complications associated with inguinal lymph node dissection for penile cancer are documented to occur most frequently in which of the following settings:

A. palliative indication.
B. prior chemotherapy.
C. insulin-dependent diabetes.
D. congestive heart failure.
E. obesity.

132. A 14-year-old boy with bladder exstrophy underwent division of the bladder neck with Mitrofanoff appendiceal stoma without bladder augmentation. Six months later, he has episodic urinary incontinence per stoma, not necessarily related to bladder fullness. A CMG on anticholinergic therapy reveals a 400 cc compliant bladder without uninhibited contractions. He leaks when he sits up at the end of the study, with no evidence of detrusor contraction. The next step is:

A. observation.
B. inject stoma with bulking agent.
C. revise appendicovesicostomy.
D. replace appendix with ileal Monti tube.
E. enterocystoplasty.

133. Hypertension in Cushing syndrome is primarily related to:

A. elevated plasma catecholamines.
B. elevated plasma aldosterone.
C. retention of water and salt.
D. ACTH-stimulated renin.
E. elevated angiotensin II.

134. A 77-year-old man has microhematuria, and serum creatinine of 1.2 mg/dl. IVP shows a normal left kidney and right hydroureteronephrosis down to a filling defect at the level of L3. Ureteroscopy shows a papillary tumor, with normal distal ureter. Biopsy of the lesion shows high-grade TCC. The next step is:

A. excision with uretero-ureterostomy.
B. distal ureterectomy with Boari flap.
C. nephroureterectomy with bladder cuff.
D. ureteroscopic ablation of the mass.
E. total ureterectomy with ileal ureter replacement.

135. An eight-year-old girl underwent colocystoplasty one year ago for a neurogenic bladder. She now has a temperature of 101° F, vomiting, and abdominal pain. She is oliguric and urinalysis shows pyuria and bacteria. Physical examination reveals abdominal tenderness, pulse of 125, and blood pressure 95/65. A cystogram is normal. After volume resuscitation, the next step is:

A. CT cystography.
B. suprapubic cystostomy.
C. laparotomy.
D. abdominal ultrasonography.
E. cystoscopy.

136. A 46-year-old man with a high velocity gunshot wound to the right lower abdomen has a normal urinalysis. During laparotomy, a small bowel perforation and right iliac vein injury are repaired. Intraoperative IVP reveals prompt bilateral excretion of contrast with no extravasation. The next step is:

A. no further evaluation.
B. ureteral exploration.
C. I.V. indigo carmine.
D. bladder filling with methylene blue.
E. retrograde ureteropyelography.

137. A 73-year-old man with osteoporosis develops biochemical recurrence following radical prostatectomy. His bone scan is negative. The treatment not associated with increased bone loss is:

A. bicalutamide.
B. leuprolide.
C. leuprolide and bicalutamide.
D. abarelix.
E. orchiectomy.

138. A boy with high imperforate anus undergoes a diverting colostomy. Over the next six months he has recurrent UTIs. Ultrasonography shows a normal spine and kidneys. The most likely cause for these urinary infections is:

A. rectourethral fistula.
B. rectovesical fistula.
C. VUR.
D. neurogenic bladder.
E. urethral stricture.

139. A 32-year-old man has pulsatile retroperitoneal bleeding immediately after Veress needle insufflation and trocar placement in the infraumbilical region for a laparoscopic procedure. The vessel most likely injured is the:

A. umbilical artery.
B. epigastric artery.
C. left iliac vein.
D. right iliac artery.
E. sacral artery.

140. During a radical cystectomy a small 3mm papillary lesion is noted at the proximal margin of the transected ureter. Frozen section reveals a low grade Ta TCC. The next step is:

A. re-resect ureter until margin negative.
B. treat with BCG via diversion stent post-op.
C. flexible ureteropyeloscopy.
D. resect ureter and ileal ureter interposition.
E. nephroureterectomy.

141. A 14-year-old boy has a straddle injury to the perineum. Physical examination reveals ecchymosis limited to the penis and scrotum. The fascia that contains the extravasated blood is:

A. Buck's.
B. dartos.
C. Colles'.
D. external spermatic.
E. transversalis.

142. A 24-year-old man who has fallen three stories has a CT scan for evaluation. The right kidney appears normal, but the left kidney shows only a thin cortical rim of contrast without contrast in the remainder of the parenchyma. This is compatible with:

A. pre-existing hydronephrosis.
B. renal arterial injury.
C. congenital vascular anomaly.
D. renal vein thrombosis.
E. renal contusion.

143. A 52-year-old man with hematuria has a right-sided 6 cm infiltrative renal mass distorting the collecting system. He had a left radical nephrectomy for RCC three years ago. Chest and abdominal CT scans are negative, but PET scan is strongly positive in one mediastinal node and a lesion in the liver. Urinary cytology reveals atypia. The next step is:

A. radiofrequency ablation.
B. partial nephrectomy.
C. radical nephrectomy.
D. systemic interleukin-2.
E. percutaneous biopsy of the renal mass.

144. A nine-year-old boy has primary nocturnal enuresis. He has used an alarm for four months but continues to wet the bed. He has daytime urgency and voids seven to eight times a day, but remains dry during that time. Repeat urinalysis is normal. The next step is:

A. voiding diary.
B. urodynamics.
C. VCUG.
D. desmopressin (DDAVP).
E. oxybutynin.

145. A 32-year-old man with infertility has an ejaculate volume of 3 ml, sperm count of 15 million/ml, 50% motility, and an elevated serum FSH. Physical examination reveals bilaterally small testes, normal vasa, and no evidence of a varicocele. His 28-year-old wife has a normal evaluation. The most appropriate next step is:

A. intrauterine insemination.
B. testicular biopsy.
C. in vitro fertilization.
D. clomiphene citrate (Clomid).
E. antisperm antibody testing.

146. A 65-year-old man with metastatic prostate cancer is treated with an LH-RH agonist. Two years later, he has a worsening bone scan, retroperitoneal adenopathy, and a PSA level of 500 ng/ml. The plasma testosterone is 30 ng/dl. The therapy most likely to provide objective tumor regression is:

A. chemotherapy.
B. bilateral orchiectomy.
C. addition of an antiandrogen.
D. strontium-89.
E. prednisone.

147. A six-month-old boy with spina bifida has moderate hydroureteronephrosis on an ultrasound examination. A cystogram shows trabeculation but no reflux. The most likely cause of the upper tract dilation is:

A. associated constipation.
B. urine storage pressure greater than 40 cm H_2O.
C. uninhibited detrusor contractions.
D. unsuspected urinary infection.
E. detrusor-sphincter dyssynergia.

148. A 28-year-old man with primary infertility has a microdeletion of the DAZ region of the Y chromosome (AZFc). One semen analysis reveals azoospermia. His wife is scheduled for in vitro fertilization. Prior to testicular sperm extraction, he should have:

A. serum dihydrotestosterone level.
B. repeat semen analysis with centrifugation.
C. renal ultrasound.
D. serum LH.
E. transrectal ultrasound.

149. During radical retropubic prostatectomy, a well-defined rectal laceration is noted. There is no fecal spillage. No preoperative bowel preparation was administered. This patient should be managed with completion of the prostatectomy and:

A. descending colostomy and Hartmann's pouch.
B. descending colostomy and mucus fistula.
C. primary closure of the laceration.
D. rectal lavage with antibiotic solution and closure.
E. temporary transverse loop colostomy.

150. A three-month-old boy had a lumbar myelomeningocele closed at birth. The finding associated with the potential for detrusor-sphincter dyssynergia is:

A. level of lesion.
B. intact bulbocavernosus reflex.
C. lower extremity movement.
D. spontaneous voiding.
E. decreased anal sphincter tone.

Question #1 ANSWER=A

Corpus cavernosal smooth muscle relaxation is largely dependent upon the endothelial cell release of endothelial-derived relaxation factor (nitric oxide). Nitric oxide causes smooth muscle relaxation by increasing smooth muscle intracellular cyclic GMP. Penile erection is mediated through a reduction, not an increase, in intracellular calcium. Nitric oxide has no direct effect on acetylcholine and VIP levels. Cyclic AMP levels are increased by endogenous PGE1, VIP, and numerous other neurotransmitters.

Lue TF: Physiology of penile erection and pathophysiology of erectile dysfunction and priapism, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 45, p 1591.

Question #2 ANSWER=D

Cystic fibrosis is the most common autosomal recessive disease in whites and often associated with male factor infertility. More than 95% of men with male factor infertility from cystic fibrosis have abnormalities of the Wolffian duct-derived structures manifested usually as congenital bilateral absence of the vas deferens. Spermatogenesis is usually, but not always normal in affected men. Anatomically, the body and tail of the epididymis, seminal vesicles and ejaculatory duct are less likely to be affected. The efferent testicular ducts in the caput epididymis are almost always present and normal.

Sigman M, Jarow JP: Male infertility, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 43, p 1475.

Jarzabek K, Zbucka M, Pepinski W, et al: Cystic fibrosis as a cause of infertility. REPROD BIOL 2004;4(2):119-129.

Question #3 ANSWER=E

Small cell carcinoma of the prostate carries a very poor prognosis. In most patients, the course is rapidly fatal. Most patients present with rapid onset of symptoms indistinguishable from other causes of bladder outlet obstruction. Systemic constitutional symptoms are reported in about 10% of cases. Chemotherapy in combination with surgery or radiation appears to be the most important component of management. Radiation is ineffective, as is surgery alone, since most patients have metastatic disease. These tumors are generally not hormonally sensitive.

Abbas F, Civantos F, Benedett P, et al: Small cell carcinoma of the bladder and prostate. J UROL 1995;46:30.

Eisenberger MA, Carducci MA: Chemotherapy for hormone-resistant prostate cancer, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 95, p 3209.

Question #4 ANSWER=A

Patients with neurogenic impotence exhibit a denervation supersensitivity and develop full erections after intracavernosal vasoactive injections. Patients with arteriogenic erectile dysfunction do not respond to intracavernosal injection therapy in as robust a fashion as patients with neurogenic ED. Venooclusive dysfunction significantly reduces the ability of a patient to respond to injection therapy. Radiation mediates its deleterious effects through combined arterial, neural, and erectile tissue damage, thus resulting in a poorer response to injection therapy.

Lue TF, Broderick G: Evaluation and nonsurgical management of erectile dysfunction and priapism, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 7. Philadelphia, WB Saunders Co, 1998, pp 1157-1180.

Question #5 ANSWER=D

Chronic testicular and epididymal pain may be associated with non-genital conditions such as ureteral or radicular lesions. After careful physical examination to rule out hernias, referral to pain management services, scrotal ultrasound and psychologic counseling are recommended. For men with chronic disabling pain, orchiectomy and/or epididymectomy rarely resolve these problems. Patients selected by their response to spermatic cord injection of local anesthetic will often respond to microsurgical cord denervation "stripping." Experience with reversal of vasectomy is inadequate to recommend this as a treatment. Results with orchiectomy or epididymectomy suggest that most of these patients will have persistent pain despite removal of the epididymis and/or gonad.

Kursh ED, Schover LR: The dilemma of chronic genital pain. AUA UPDATE SERIES 1997, vol XVI, lesson 37, pp 290-295.

Heidenreich A, Olbert P, Engelmann UH: Management of chronic testalgia by microsurgical testicular denervation. EUR UROL 2002;41(4):392-397.

Question #6 ANSWER=B

Leiomyosarcoma is the most common renal sarcoma. Optimal treatment is excision and, in this case, should include radical nephrectomy as well as removal of the regional lymph nodes. The utility of adjuvant radiation or chemotherapy has not been established, and response rates for measurable disease are low. In this elderly patient at risk of heart disease, reserving such therapy for local recurrence is the best approach.

Novick AC, Campbell SC: Renal tumors, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 75, p 2672.

Question #7 ANSWER=D

All of the medications have been used to treat male sexual dysfunction. The only drug recognized to cause priapism is trazodone, a centrally acting serotonergic agonist. This occurs in approximately 1:20,000 patients on this drug. This event may not occur during initial exposure to the medication. The general recommendation is that extreme caution should be exercised when this medication is co-prescribed with other agents promoting sexual function.

Lal S, Rios O, Thavundayil JX: Treatment of impotence with trazodone: A case report. J UROL 1990;143:819.

Broderick GA, Lue TF: Evaluation and nonsurgical management of erectile dysfunction and priapism, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 46, p 1619.

Question #8 ANSWER=B

Matrix stones are radiolucent concretions composed of macroproteins and may form as a consequence of an infection with a urease producing organism. CT scan shows a soft tissue mass without enhancement. Most renal pelvic tumors enhance with gadolinium. While papillary necrosis is a diagnostic consideration, the presence of a Proteus mirabilis infection makes matrix stone more likely.

Liu CC, Li C-C, Chou YH, Huang CH: Matrix stone. J COMPUT ASSIST TOMOGR 2003;27:810-811.

Question #9 ANSWER=C

Surgical treatment of bony metastases from renal cell carcinoma is indicated for weight-bearing bones with lytic lesions of greater than 3 cm. The risk of fracture is not likely to be reduced with external radiation or strontium-89. Although this patient has a poor prognosis, average survival is one year and, should he develop a femur fracture, the quality of his remaining survival will be markedly diminished.

Flanigan RC, Campbell SC, Clark JL, Picker MM: Metastatic renal cell carcinoma. CUR TREAT OPTIONS ONCOL 2003;4:385-390.

Bohm P, Huber J: The surgical treatment of bony metastasis of the spine and limb. J BONE JOINT SUR BR 2002;84:521-529.

Question #10 ANSWER=E

Phosphodiesterase type 5 (PDE5) inhibitor drugs have been used to treat sexual dysfunction resulting from SSRI antidepressant treatment in both men and women with some benefit. The female genitalia possess PDE5 and therefore capable of responding to such drugs. The mechanism by which SSRI's induce sexual function changes in men and women is likely through serotonin alterations at the receptor or transporter level, but are not fully elucidated. Large randomized, placebo-controlled studies are pending.

Shabsigh R: Female sexual function and dysfunction, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 48, pp 1710-1733.

Question #11 ANSWER=D

In the setting of prior radiation a fistula between the pouch and the vagina is unlikely to heal with conservative measures. The pouch is otherwise functioning well and should be salvageable, with excision of the diseased segment, primary closure, and interposition of omentum. Because of the distance from the pouch to the vaginal cuff, transvaginal repair is unlikely to be successful.

Rupp DE, O'Connor RC, Kate EE. Steinberg GD: Neobladder-vaginal fistula after cystectomy and orthotopic neobladder reconstruction. BR J UROL INT 2004;94:1092-1095.

Dmochowski R: Surgery for vesicovaginal fistula, urethrovaginal fistula, and urethral diverticulum, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 35, pp 1195-1217.

Question #12 ANSWER=B

The negative Hounsfield units on the CT scan indicate the presence of fat in the tumor, showing that this is a renal angiomyolipoma which has bled acutely. Angiographic embolization is often successful in these tumors, can be performed quickly without the need for general anesthetic, and can usually preserve the normal portion of the kidney. An alternative would be open lower pole partial nephrectomy, once the patient is stabilized. Radical nephrectomy should be reserved for those kidneys with large central lesions or multiple tumors not amenable to partial nephrectomy. Laparoscopic nephrectomy would be very difficult in the face of recent acute hemorrhage. Radio frequency ablation should not be used for such a large tumor.

Novick AC, Campbell SC: Renal tumors, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 75, p 2672.

Question #13 ANSWER=A

The widely used intracavernosal injection agent trimix has efficacy rates over 90%. Papaverine is a non-specific phosphodiesterase inhibitor, phentolamine is an alpha-adrenergic blocker and PGE1 elevates intracellular cAMP levels.

Broderick GA, Lue TF: Evaluation and nonsurgical management of erectile dysfunction and priapism, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 46, pp 1656-1658.

Question #14 ANSWER=E

Xanthogranulomatous pyelonephritis (XGP) is a rare form of renal infection associated with poorly functioning kidneys, renal masses or enlargements, and calculous disease or dystrophic calcifications. XGP is most commonly seen in middle-aged or older women, especially diabetics and patients who are immuno-compromised or have frequent UTIs. The most common organism associated with XGP is E. coli in 50% of cases with Proteus the second most common pathogen.

Gregg CR, Rogers TE, Munford RS: Xanthogranulomatous pyelonephritis. CURR CLIN TOPICS INF DIS 1999;19:287-304.

Question #15 ANSWER=E

The scenario is most consistent with either Wilms' tumor or renal cell carcinoma, either of which may cause hypertension. Both should be treated with radical nephrectomy. An arteriogram is invasive and not likely to add useful information. Needle biopsy of the mass risks hemorrhage and implantation of cancer cells along the tract. Renal vein renin determination with venacavography is not indicated. Partial nephrectomy is not the first choice in tumors this large when the contralateral kidney is normal.

Novick AC, Campbell SC: Renal tumors, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 75, p 2672.

Question #16 ANSWER=B

The IIEF is the gold standard instrument for evaluating sexual function and response to pharmacotherapy. It has 15 Questions divided into 5 domains, erectile function, libido, orgasm, intercourse satisfaction and overall satisfaction. Each Question is scored on a 5-point scale, 5 representing always or almost always and 1 representing never or almost never. Questions 1-5 and 15 are grouped into the erectile function domain and is scored from 6-30 for the sexually active male. Absence of activity is scored 0. An erectile function domain score greater than or equal to 26 is deemed to represent normal function, while a score less than or equal to 10 represents severe ED. Finally, it is believed that a 1-point or more increase in each domain represents a clinically meaningful alteration.

Rosen RC, Riley A, Wagner G, et al: The international index of erectile function (IIEF): A multi-dimensional scale for assessment of erectile function. UROL 1997;49:822.

Broderick GA, Lue TF: Evaluation and nonsurgical management of erectile dysfunction and priapism, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 46, p 1623.

Question #17 ANSWER=D

A number of maneuvers can reduce renal pelvic pressure during ureteroscopy, including placement of nephrostomy tube, placement of a ureteral catheter alongside the ureteroscope and placement of a bladder catheter to keep the bladder decompressed. Cadaver and clinical studies demonstrated reduced renal pelvic pressures with use of a ureteral access sheath during ureteroscopy, particularly when the position of the proximal end of the access sheath was advanced in the ureter to the level of the ureteroscope. Use of a ureteral access sheath may increase the safety of lengthy ureteroscopic procedures and reduce the likelihood of absorption of infected fluids when treating patients with infected stones. Ketorolac will decrease renal blood flow, but will not produce a significant decrease in renal pelvic pressure in this setting.

Rehman J, Monga M, Landman J, et al: Characterization of intrapelvic pressure during ureteropyeloscopy with ureteral access sheaths. UROL 2003;61:713-718.

Vanlangendonck R, Landman J: Ureteral access strategies: Pro-access sheath. UROL CLIN N AM 2004;31:71-81.

Auge BK, Pietrow PK, Lallas CD, et al: Ureteral access sheath provides protection against elevated renal pressures during routine flexible ureteroscopic stone manipulation. J ENDOUROL 2004;18:33-36.

Question #18 ANSWER=D

Complications of partial nephrectomy include hemorrhage, urinary fistula formation, ureteral obstruction, renal insufficiency, and infection. Significant intraoperative bleeding can occur in patients who are undergoing partial nephrectomy. The need for early control and ready access to the renal artery is emphasized. Postoperative hemorrhage may be self-limiting if confined to the retroperitoneum, or it may be associated with gross hematuria. The initial management of postoperative hemorrhage is expectant with bedrest, serial hemoglobin, and hematocrit determinations, frequent monitoring of vital signs, and blood transfusions as needed. Angiography may be helpful if bleeding persists, to localize actively bleeding segmental arteries, which may be controlled by angioinfarction. Severe intractable hemorrhage may necessitate re-exploration with early control of the renal vessels and ligation of the active bleeding points.

Novick AC, Campbell SC: Renal tumors, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 75, p 2672.

Question #19 ANSWER=D

The only listed procedure responsible for an appreciable incidence of injury to the nerve affecting bladder and erectile function is abdominal perineal resection for rectal cancer. Radiation therapy causes ED through structural alterations in erectile tissue and cavernosal arteries (and arteritis obliterans). Radiation therapy does not cause detrusor areflexia. Proctocolectomy and bilateral renal transplant surgery do not interfere with the neural supply to the bladder or penis. Radical perineal prostatectomy is performed below the urogenital diaphragm and thus does not affect the neural supply to penis or bladder. Bilateral renal transplantation utilizing the hypogastric arteries may cause erectile dysfunction, but is unlikely to alter bladder function.

Wein AJ: Neuromuscular dysfunction of the lower urinary tract and its management, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 26, p 931.

Question #20 ANSWER=C

In genitourinary tuberculosis, effective chemotherapy requires operative intervention for adequate effect. Many devitalized areas of the urinary tract are not adequately exposed to these chemotherapeutic agents. When surgery is indicated for the removal of irreversibly damaged tissue to reduce the burden of infection, these surgical procedures are best performed after at least six weeks of anti-tuberculosis therapy. This surgery should remove any nonfunctioning tissue containing viable organism facilitating the penetration of antibiotics in the surrounding healthy issue.

Porter MP, Eubank WB, Krieger JN: Genitourinary tuberculosis: A focused review. CONTEMP UROL 2001;13:34-49.

Question #21 ANSWER=D

This patient has an infected lymphocele that has been inadequately drained. It is unlikely after three weeks that the situation will improve spontaneously or with intravenous antibiotics alone, and additional intervention is warranted because the patient is still ill. Laparoscopic unroofing and sclerotherapy are contraindicated for an infected lymphocele. Placement of a second drain percutaneously is most likely to resolve the problem promptly. An alternative but more invasive option is open extraperitoneal drainage, which would be indicated if placement of a second drain fails.

Pepper RJ, Pati J, Kaisary AV: The incidence and treatment of lymphoceles after radical retropubic prostatectomy. BR J UROL INT 2005;95:772-775.

Question #22 ANSWER=E

This donor with an asymptomatic ureteropelvic junction obstruction and no urologic history need not be excluded from donation. However, the donor should always be left with a normal kidney and therefore the left kidney should be chosen for donation. The diagnosis of UPJ obstruction is made radiographically and is independent of whether or not the ureter appears anatomically patent at the time of intraoperative evaluation. Left donor nephrectomy should be done using the native ureter to allow restoration of urinary continuity with a ureteropyelostomy. Dismembered pyeloplasty using the donor ureter will result in ureteral necrosis.

Barry JM: Renal transplantation, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, pp 345-376.

Question #23 ANSWER=B

This patient's stone is most likely composed of uric acid. The clues to this diagnosis are the low urinary pH and low attenuation coefficient of the stone. Hounsfield units can be used to differentiate uric acid from calcium stones; uric acid stones average approximately 300 Hounsfield units, while calcium oxalate stones average 650. Some uric acid stones are radio-opaque. Urinary pH manipulation should be initially considered for this patient as she has minimal symptoms and there is no hydronephrosis.

Joseph P, Mandal AK, Singh SK, et al: Computerized tomography attenuation value of renal calculus: Can it predict successful fragmentation of the calculus by extracorporeal shock wave lithotripsy? A preliminary study. J UROL 2002;167:1968-1971.

Nakada SY, Hoff DG, Attai S, et al: Determination of stone composition by noncontrast spiral computed tomography in the clinical setting. UROL 2002;55:816-819.

Question #24 ANSWER=E

Transient symptoms of outlet obstruction are common immediately after cryosurgery, often due to the urethral sloughing that can occur if the urethral warming catheter is not adequate. Management is temporary bladder drainage, and the symptoms generally resolve within a few weeks without additional treatment. Because obstruction is generally due to devitalized tissue, alpha blockers and hormone therapy are generally not effective. TURP may be indicated if retention persists.

Shinohara K, Carroll PR: Cryotherapy for prostate cancer, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, pp 3171-3181.

Question #25 ANSWER=B

With increased long term success of renal transplantation, many women of childbearing age wish to become pregnant. Successful renal transplantation usually restores fertility in premenopausal women. A large study of pregnancies following renal transplantation has confirmed the safety of pregnancy in such patients: 94% of pregnancies that progressed beyond the first trimester were successfully completed. The most common outcome was preterm delivery (50%), followed by preeclampsia (30%), intrauterine growth retardation (20%), and rejection (10%). There is no increased risk of fetal genetic abnormalities. Renal transplant function may be adversely affected in pregnancy if the serum creatinine is > 1.5 mg/dl.

Barry JM: Renal transplantation, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 10, pp 345-376.

Question #26 ANSWER=D

Examination of the initial 24-hour urine collection from this patient, would note small white crystals at the bottom of the urine container. These are uric acid crystals that have precipitated out of solution. Uric acid precipitation is due to the urine pH being below the PKA of uric acid (less than 5.5). Once the urine pH is raised above 5.5 with alkali therapy (in this case potassium citrate), the uric acid will go back into solution and the true solubilized uric acid level can be calculated by analysis of this 24-hour urine specimen.

Shekarriz B, Stoller ML: Uric acid nephrolithiasis: Current concepts and controversies. J UROL 2002;168:1307-1314.

Question #27 ANSWER=C

This patient has a rapid recurrence and a very aggressive (Gleason 8) carcinoma. He is very unlikely to have a local recurrence only, and would be a poor candidate for salvage radiation therapy. Rapid PSA doubling time has been shown to correlate with development of metastatic disease and early mortality due to prostate cancer. Although observation is an option and should be discussed, he is likely to require treatment soon. Hormone therapy with leuprolide is the best option, and he could be considered for an intermittent therapy protocol as well. Oral bicalutamide monotherapy has not been proven to be equivalent to LH-RH agonists in this setting.

Eastham JA, Scardino PT: Radical prostatectomy, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 89, p 3080.

Question #28 ANSWER=E

This patient has symptomatic and irreversible chronic allograft nephropathy. There is no role for a trial of calcineurin (cyclosporin or tacrolimus) sparing or increasing immunosuppression in this setting. Similarly, minimal therapeutic guidance will be obtained from either arteriography or cystoscopy other than attempting localization of the source of the hematuria to the transplant ureter, but this will not alter the appropriate action, allograft nephrectomy.

Barry JM: Renal transplantation, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 10, pp 345-376.

Question #29 ANSWER=A

The major causes of uric acid stone formation are dehydration, hypercosuria and low urine pH. In patients with an ileostomy, dehydration is a major problem because of the high loss of water and solutes from the ileostomy. This is believed to be the major inciting reason for the formation of uric acid stones in these patients. Bicarbonate loss may also occur from ileostomy drainage. If excessive, a low urinary pH may occur and contribute to decreased uric acid solubility.

Worcester EM: Stones due to bowel disease, in Coe FL, Favus MJ, Pak CYC, Parks JH, Preminger GM (eds): KIDNEY STONES: MEDICAL AND SURGICAL MANAGEMENT. Philadelphia, Lippincott-Raven, 1996, chap 39, pp 885-889.

Question #30 ANSWER=C

This patient has a persistent urine leak from the urethrovesical anastomosis five days following a radical prostatectomy. The cystogram confirms the site of persistent extravasation at the urethrovesical junction, and the closed suction JP drain is noted in close proximity. If the drain is found to be on or near the anastomosis, the leakage will likely not resolve spontaneously until the drain is repositioned. The Foley catheter is in good position and thus repositioning it would not improve the leakage. Furthermore, replacing it may be difficult, is unnecessary and risks disrupting the anastomosis further. While removing the drain may solve the problem, the patient is at risk to develop a urinoma until the urine leak resolves. Bilateral nephrostomy tubes are a consideration if this maneuver is unsuccessful. Open revision of the anastomosis is rarely performed since most cases resolve with conservative management.

Taneja SS, deKernion JB: Complications of radical retropubic prostatectomy, in Taneja SS, Smith RB, Ehrlich RM (eds): COMPLICATIONS IN UROLOGIC SURGERY, DIAGNOSIS AND PREVENTION. Philadelphia, WB Saunders Co, 2001, p 412.

Question #31 ANSWER=D

This patient has neurofibromatosis, which is characterized by cafe-au-lait cutaneous pigmentation, cutaneous neurofibromas, CNS tumors, and skeletal disorders. Hypertension in these patients is most often due to renal artery stenosis, that is characterized by fibrosis and thickening of the intima, proliferation of neural tissue within the arterial wall, perivascular nodular proliferation, and occasional aneurysmal dilatation. The angiographic appearance may be indistinguishable from that of intimal fibroplasia. Hypertension in this setting is less commonly the result of associated pheochromocytoma or aortic coarctation. Conn's syndrome is a form of primary hyperaldosteronism characterized by hypertension, hypokalemia, hypernatremia, alkalosis, and periodic paralysis caused by an aldosterone-secreting adenoma. Adrenal cortical carcinomas and juxtaglomerular cell tumors can be associated with hypertension, but are not likely in the clinical setting described. Essential hypertension is uncommon in this age group.

Novick AC, Fergany A: Renovascular hypertension and ischemic nephropathy, in Walsh PC, Retik AB, Vaughan ED, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, pp 229-271.

Question #32 ANSWER=D

Retroperitoneal fibrosis is due to drugs (methysergide, bromocriptine, beta-blockers), irradiation, surgery, aortic aneurysms, and retroperitoneal diseases such as pancreatic tumors, and lymphoproliferative diseases. Renal ultrasound may be normal in patients with retroperitoneal fibrosis because of the limited ability of the ureter/renal pelvis to dilate due to the fibrosis. Diabetes insipidus, polydipsia, reflux, and acute pyelonephritis cause non-obstructive urinary tract dilation.

Cronan JJ: Urinary obstruction, in Grainger RG, Allison D, Adam A, Dixon K (eds): DIAGNOSTIC RADIOLOGY: A TEXTBOOK OF MEDICAL IMAGING, ed 4. London, Churchill Livingston, 2001, p 1610.

Question #33 ANSWER=A

Patients with gouty diathesis (idiopathic low urine pH) can form either uric acid or calcium stones. These patients form calcium stones by heterologous nucleation on uric acid crystals. The most important diagnostic test in patients with gouty diathesis is urine pH, with these patients consistently having a urine pH below 5. Alkalinization with potassium citrate will prevent formation of both uric acid and calcium oxalate stones in patients with gouty diathesis.

Khatchadourian J, Preminger GM, Whitson PA, Adams-Huet B, et al: Clinical and biochemical presentation of gouty diathesis: Comparison of uric acid versus pure calcium stone formation. J UROL 1995;154:1665-1669.

Ruml LA, Pearle MS, Pak CY: Medical therapy, calcium oxalate urolithiasis. UROL CLIN N AM 1997;24:117-133.

Question #34 ANSWER=C

It is most likely that this patient has autonomic dysreflexia that should be elicited easily by a CMG prior to diagnostic efforts made to identify a pheochromocytoma. CMG should be done with blood pressure monitoring. The presence of an indwelling catheter does not prevent dysreflexia. Clean intermittent catheterization will not aid in the diagnosis of autonomic dysreflexia, although, it is an effective treatment for the patient's neurogenic bladder.

Wein AJ: Neuromuscular dysfunction of the lower urinary tract and its management, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 26, pp 950-951.

Question #35 ANSWER=D

Calculi may be the initial feature of sarcoidosis in a small percentage of patients. In those individuals who present with hypercalcemia, normal to increased serum phosphate, and low or low normal intact serum PTH, sarcoidosis should be suspected. Increased I-25 dihydroxy Vitamin D levels in these patients will increase the intestinal absorption of calcium and suppress PTH secretion. Steroids will decrease intestinal absorption of calcium and should normalize both hypercalcemia and hypercalciuria.

Rizzato G, Fraioli P, Montemurro L: Nephrolithiasis as a presenting feature of chronic sarcoidosis. THORAX 1995;50:555-559.

Rodman JS, Mahler RJ: Kidney stones as a manifestation of hypercalcemic disorders: Hyperparathyroidism and sarcoidosis. UROL CLIN N AM 2000;7:275-285.

Question #36 ANSWER=D

In this patient, a trial of conservative management using urethral catheter drainage is indicated because of the size of the fistula and the brief interval after the surgery. Given that the patient has no prior history of radiation or pelvic surgery, tissues should be adequately vascularized, mobile, and capable of healing. Should catheter drainage fail, early repair may be done using a vaginal approach. Fulguration is not necessary unless conservative therapy fails.

Dmochowski R: Surgery for vesicovaginal fistula, urethrovaginal fistula, and urethral diverticulum, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 35, p 1195.

Question #37 ANSWER=A

Areas above the brainstem are generally inhibitory in function relative to detrusor function. Injuries as a result of trauma or surgery to areas above the brainstem usually result in precipitous, complete voiding related to detrusor hyperreflexia with sphincteric coordination facilitated by an intact brainstem. True detrusor-sphincter dyssynergia is seen in patients with spinal cord injury and multiple sclerosis, but does not occur with supratentorial lesions.

Wein AJ: Neuromuscular dysfunction of the lower urinary tract and its management, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 26, p 938.

Question #38 ANSWER=A

Horseshoe kidneys may develop renal calculi, possibly as a result of high insertion of the ureter and relative stasis of urine. Patients with small, nonobstructing calculi in nondependent locations may be treated with SWL. However, obstructing calculi or those that are large or in dependent locations are best treated with percutaneous techniques. The initial puncture is more medial than that for normally positioned kidneys and should be placed through a posterior calyx.

Motola JA, Smith AD: Therapeutic options for the management of upper tract calculi. UROL CLIN N AM 1990;17:191-206.

Lingeman JE, Lifshitz DA, Evan AP: Surgical management of urinary lithiasis, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 99, pp 3428-3429.

Question #39 ANSWER=D

Uncomplicated vesicovaginal fistulas can be closed using meticulous technique and a multi-layer closure. Repair of more complex fistulas often requires the use of well-vascularized tissue flaps positioned between the bladder and vaginal repair sites. The use of Martius (fibrofatty tissue), myocutaneous labial (skin and fibrofatty tissue) or, more rarely, gluteal skin flaps can be used to repair low fistulas. Such flaps may not be of sufficient length to reach high fistulas. Peritoneal flaps can be harvested through the vaginal incision and are in close proximity to such fistulas. Use of peritoneum obviates the morbidity of an abdominal incision (necessary for harvesting the omentum) or an incision along the inner thigh (necessary for harvesting the gracilis muscle).

Dmochowski R: Surgery for vesicovaginal fistula, urethrovaginal fistula, and urethral diverticulum, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 35, p 1201.

Question #40 ANSWER=D

Efficacy of sphincterotomy can be determined by the maximum voiding pressure which in this case is low. Although the patient does not empty to completion the residual is not significant as long as the resting and voiding pressures remain low (< 40 cm of H_2O). The patient will not benefit from a repeat sphincterotomy or resection of the bladder neck. Bethanechol and phenoxybenzamine are not likely to improve emptying. With the patient's low voiding pressure he is an ideal candidate for condom catheter drainage, as he is at low risk of infection. CIC will be difficult for this patient to perform given his C-7 injury.

Wein AJ: Neuromuscular dysfunction of the urinary tract and its management, in Walsh PC, Retik AB, Vaughan ED, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, chap 26, p 1012.

Question #41 ANSWER=C

Distal (type 1) renal tubular acidosis is a common cause of severe stone disease and is associated with inappropriately high urinary pH, hypercalciuria, and hypocitraturia. These features promote formation of calcium oxalate and calcium phosphate stones. Therefore, the best treatment to reduce the risk of stone formation is an agent that increases urinary citrate. Clinical studies have shown that potassium citrate therapy may be effective. Sodium bicarbonate and sodium citrate are reasonable alternatives for those who are potassium intolerant. However, the sodium load may augment calcium excretion. Thiazide therapy would further reduce citrate excretion. The administration of orthophosphates may decrease calcium excretion but would also increase phosphate excretion; the latter further promoting calcium phosphate stone formation. Pyridoxine therapy may result in a decrease in oxalate excretion and has been shown to be effective in some patients afflicted with type I primary hyperoxaluria.

Menon M, Resnick MI: Urinary lithiasis: Etiology, diagnosis, and medical management, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 96, pp 3255-3257.

Question #42 ANSWER=E

This patient has congenital megaureters. These have been shown to have a high spontaneous improvement rate and hence observation is recommended in most asymptomatic cases. There is a high rate of UTI and prophylactic antibiotics are recommended.

Baskin LS, Zderic SA, Snyder HM, Duckett JW: Primary dilated megaureter: Long-term follow-up. J UROL 1994;152:618-621.

Atala A, Keating MA: Vesicoureteral reflux and megaureter, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 59, p 2053.

Question #43 ANSWER=C

The presentation suggests primary bladder neck obstruction, observed in approximately 3% of women with lower urinary tract symptoms. The cause of this condition is not known. The criteria for this diagnosis is controversial, but at least one investigator has suggested a detrusor pressure > 20 cm H_2O with low-flow is diagnostic of obstruction for women. The obstruction is commonly identified at the bladder neck. Management consists of transurethral bladder neck resection.

Blaivas JG, Flisser AJ, Tash JA: Treatment of primary bladder neck obstruction in women with transurethral resection of the bladder neck. J UROL 2004;171:1172-1175.

Wein AJ: Neuromuscular dysfunction of the lower urinary tract and its management, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 26, p 959.

Question #44 ANSWER=D

It is not always necessary to treat Candida UTIs. Very little is gained and it may be counter productive to eradicate Candida from the urine of an asymptomatic patient, particularly those with long term indwelling catheters. Symptomatic patients, however, may benefit from treatment. Previously, amphotericin B was the only satisfactory drug for treatment of Candidal urinary tract infection. It can be administered intravenously or by irrigation. Oral fluconazole is highly effective for Candiduria. It has the advantage over bladder irrigation with amphotericin B of not requiring catheterization. It is as effective as amphotericin B in patients with uncomplicated symptomatic candidal UTIs. Ketoconazole and flucytosine are less effective than fluconazole and are not recommended.

Kunin CM: Urinary tract infections, in DETECTION, PREVENTION, AND MANAGEMENT, ed 5. Baltimore, Williams and Wilkins, 1997, pp 391-392.

Question #45 ANSWER=C

Measuring renal function in patients with intestinal diversion may be difficult. Most parameters of renal function will be affected by the intestinal absorption of various substances in the urine, including creatinine and urea, as well as secretion of alkalinizing substances and alteration in the osmotic content. Sodium handling in ileal segments is not markedly altered as ammonium substitutes for sodium in the Na/H antiporter in the bowel lumen.

McDougal WS: Use of intestinal segments and urinary diversion, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 106, pp 3778-3779.

Question #46 ANSWER=C

Based on the AUA guidelines of 2003, the initial evaluation of an otherwise healthy patient should include a history and focused physical exam including digital rectal exam and neurologic function, a urinalysis, and PSA if the patient has a life expectancy over ten years. Serum creatinine is not indicated unless other abnormalities are detected. Uroflow, videourodynamics, and postvoid residual are not usually necessary prior to the institution of watchful waiting or medical therapy.

AUA Practice Guidelines Committee: AUA guideline on management of benign prostatic hyperplasia (2003). Chapter 1: Diagnosis and treatment recommendations. J UROL 2003;170:530-547.

Question #47 ANSWER=E

Balanitis xerotica obliterans (BXO) is a benign condition that presents with phimosis and acquired meatal stenosis. The atrophic white plaques of BXO need to be distinguished histologically from leukoplakia, erythroplasia of Queyrat (10% risk of malignant transformation) and Bowen's disease (concomitant visceral malignancy). The cause of BXO is unknown although an autoimmune association with thyroid antibodies has been reported. Meatal or parameatal BXO is associated with intraurethral involvement and endoscopy/retrograde urethrography is required for evaluation. Local application of 0.1% triamcinolone ointment may control symptoms of burning and itching.

Akporiage LE, Jordan GH, Devine CJ Jr: Balanitis xerotica obliterans (BXO). AUA UPDATE SERIES 1997, vol XVI, lesson 21, p 162.

Question #48 ANSWER=C

The outer zone of the adrenal, the adrenal cortex, comprises more than 80% of the gland. The cortical layers, from outside to inside, are the glomerulosa, fasciculata and the reticularis. The zona glomerulosa is the only source of the major mineralocorticoid aldosterone. The fasciculata produces glucocorticoids and the reticularis produces androgens.

Vaughan ED Jr, Blumenfeld JD, Del Pizzo J, Schichman SJ, Sosa RE: The adrenals, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 101, p 3507.

Question #49 ANSWER=B

Finasteride is very effective in the management of gross hematuria after TURP for BPH. None of the other listed treatments (e.g., terazosin, saw palmetto [Serenoa repens]) have efficacy or have not been evaluated (e.g., abarelix) in this setting.

Lepor H, Lowe FC: Evaluation and nonsurgical management of benign prostatic hyperplasia, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 39, p 1363.

Question #50 ANSWER=D

A variety of host defense and bacterial virulence factors contribute to the pathogenesis of UTIs. Host defenses include high urine osmolality, low pH, high urea, efficient micturition, a number of urine inhibitors of bacterial adherence, e.g., Tamm-Horsfall protein, lactoferrin, oligosaccharides and mucopolysaccharides. Immune responses to UTIs affect hormonal immunity (secretory IgA) as well as cytokine production (IL6, IL8). Cranberry juice contains substances that inhibit the adherence of uropathogenic bacteria to uroepithelial cells. Cranberry ingestion does not have a substantive effect on urine pH.

Jepson RG, Mihaljevic L, Craig S: Cranberries for the prevention of UTI's (Cochrane Review 1): The Cochrane Library, ed 4. Oxford, 1998.

Avorn J, Monane M, Gurwitz JH: Reduction of bacteriuria and pyuria after ingestion of cranberry juice. JAMA 1994;271:751-754.

Question #51 ANSWER=E

In patients with chronic renal failure, blood clotting is abnormal because of platelet dysfunction resulting from a deficiency of von Willebrand factor multimers and the presence of small molecules that impair platelet function. Because of the qualitative platelet defect, the most sensitive test to predict the occurrence of bleeding is the determination of a bleeding time.

Goldfarb DA, Nally JV Jr, Schreiber MJ Jr: Etiology, pathogenesis, and management of renal failure, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 8, p 272.

Question #52 ANSWER=A

There is an increased incidence of nocturia in the elderly as a normal physiologic response. The condition is associated with an age-related decline in renal concentrating ability. In people older than 70 years of age, voiding twice during the night is normal. Her presentation is informative enough to exclude other major causes of nocturia, and further diagnostic evaluation is not necessary. Anticholinergic therapy is not recommended and is associated with side effects.

Resnick NM, Yalla SV: Geriatric incontinence and voiding dysfunction, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 36, pp 1218-1234.

Question #53 ANSWER=E

Enterococci are the second most common cause of nosocomial UTIs after E. coli. Most urinary infections with these bacteria are catheter related. Enterococcus fecalis is by far the most common species. Enterococci fecalis is often susceptible to a variety of antibiotics but ampicillin, gentamicin, and vancomycin resistant strains pose major therapeutic problems. Most Enterococci are still sensitive to nitrofurantoin. Fluoroquinolones are not reliably effective against this organism.

Pallares R, Pujo LM, Penna C, et al: Cephalosporins as risk factor for nosocomial Enterococcus fecalis bacteremia. ARCH INT MED 1993;153:1581-1586.

Kunin CM: URINARY TRACT INFECTIONS: DETECTION, PREVENTION AND MANAGEMENT. Baltimore, Williams & Wilkins, 1997, pp 314-315.

Question #54 ANSWER=E

Thin parenchyma on ultrasound, degree of hydroureter, degree of hydronephrosis, and age at diagnosis do not reflect function. The location of the orifice is related to the degree of dysplasia as the more remote the ureteral opening, the higher the degree of renal maldevelopment.

Schlussel RN, Retik AB: Ectopic ureter, ureterocele, and other anomalies of the ureter, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 58, pp 2007-2052.

Question #55 ANSWER=A

A complete spinal cord injury is usually followed by a period of decreased spinal cord activity at and below the level of the lesion, producing a state of "spinal shock". Both autonomic and somatic activity are suppressed, resulting in detrusor areflexia. The bladder neck is generally closed and competent. Striated sphincter tone is decreased, but usually preserved enough to maintain continence. Urinary retention is generally the rule during this stage.

Wein AJ: Neuromuscular dysfunction of the lower urinary tract and its management, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 26, p 945.

Question #56 ANSWER=B

Acute genital herpes simplex type II infection is a common cause of acute urinary retention in healthy sexually active young women. Her physical findings are those of acute herpes infection which can be confirmed by culture of the lesions or serology. If she does not improve, then other evaluation may be warranted.

Yamanashi T, Yasuda K, Sakakbara R, et al: Urinary retention due to herpes virus infections. NEURO UROL URODYN 1998;17(6) 613-619.

Question #57 ANSWER=C

Following ligation of the testicular artery, the blood supply to the testis is from the artery to the vas deferens, a branch of the inferior vesical artery and from the external spermatic artery a branch of the inferior epigastric artery.

Silver RI, Docimo SG: Cryptorchidism, in Gonzales ET, Bauer SB (eds): PEDIATRIC UROLOGY PRACTICE. Philadelphia, Lippincott Williams & Wilkins, 1999, chap 29, p 511.

Question #58 ANSWER=A

Despite the clinical examination that clearly demonstrates urinary incontinence due to urethral hypermobility, her only complaint is urge incontinence. The failure to diagnose detrusor instability on cystometric examination does not exclude this condition, and from a clinical viewpoint, her main problem is detrusor instability. A normal uroflow essentially excludes urethral obstruction. The most reasonable next step is to treat the instability with oxybutynin. Suburethral sling should not be the first step in the management of women with mild stress incontinence.

Blaivas JG, Groutz A: Urinary incontinence: Pathophysiology, evaluation, and management overview, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 27, p 1047.

Question #59 ANSWER=D

The standard definition of significant bacteriuria for a clean voided urine is > 10^5 CFU/ml of a uropathogen. This criterion has stood the test of time for screening and epidemiological studies and for entering patients in clinical trials. However there are several important exceptions to its rigid use in clinical practice and one is in patients with a pyuria/dysuria syndrome. In these patients, a lower colony count may represent significant bacteriuria. Certain bacterial species such as coagulase negative staphylococci grow slowly in urine and significant infections may only have counts of 10^3 CFU/ml.

Kunin CM, White LVA, Tong HH: Reassessment of the importance of "low count" bacteriuria in young women with acute urinary symptoms. ANN INTERN MED 1993:119:454-460.

Schaeffer AJ: Infections and inflammations of the genitourinary tract, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 14, p 515.

Question #60 ANSWER=B

The body of the penis is composed of three spongy erectile tissues completely covered by skin. The two cavernous bodies lie on the dorsum of the penis and are surrounded by a double layer of dense fibrous connective tissue named Buck's fascia and the tunica albuginea. They are incompletely separated by a layer of the same tissue, the septum penis, through the major part of the penile body. As the corpora approach the perineum, they diverge from each other to form the crura. Each crus is firmly adherent to the ramus of the ischia and pubis and is surrounded by the fibers of the ischiocavernosus muscle.

Brooks JD: Anatomy of the lower urinary tract and male genitalia, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 2, pp 41-79.

Question #61 ANSWER=C

The abdominal leak pressure study is consistent with incontinence due to intrinsic sphincter deficiency (ISD). Artificial sphincters are generally not performed in women because of significant morbidity. Suprapubic and vaginal suspensions can correct urethral hypermobility, but are much less likely to cure leakage from ISD. Biofeedback, although useful for detrusor instability and mild stress incontinence, is rarely helpful for intrinsic sphincter deficiency defined by a low abdominal leak point pressure. A pubovaginal sling procedure would also be an appropriate choice in this setting. Collagen is less invasive and has a reasonable chance for success in this patient.

Appell RA: Injection therapy for urinary incontinence, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 33, p 1172.

Question #62 ANSWER=E

Vancomycin-resistant enterococcal (VRE) infections has emerged as a major cause of nosocomial infections especially in immunocompromised and neutropenic hospitalized patients. The percentage of VRE isolates from intensive care units increased from 0.4% in 1989 to 23.9% in 1998. VRE isolates are generally susceptible to doxycycline and nitrofurantoin. Nitrofurantoin and fosfomycin have poor tissue (prostate, epididymis) penetration. Most gram positive uropathogens are resistant to TMP-SMX. Azithromycin is usually not effective for VRE. Severe VRE infections may require treatment with parenteral quinupristin/dalfopristin (a streptogramin antibiotic) or oral linezolid (an oxazolidinone).

Morris JG, Roghmann MC, Schwalbe R: Management of patients with vancomycin-resistant enterococci. INF DIS CLIN PRACT 2000;9:10-16.

Question #63 ANSWER=C

The anatomy of the femoral canal from lateral to medial is the femoral nerve, the femoral artery, the femoral vein and lymphatic channels. This is important when drawing blood from the femoral vessels. One should be aware of this relationship when dissecting out the saphenous vein.

Kabalin JN: Surgical anatomy of the retroperitoneum, kidneys, and ureters, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 1, p 14.

Question #64 ANSWER=B

Imipramine's most prominent effect on the lower urinary tract is direct smooth muscle inhibition. It also has a systemic anticholinergic effect, but this is not as clinically significant in the bladder as its direct relaxant effect. Imipramine also causes blockade of norepinephrine reuptake and this explains its alpha-adrenergic effect on the bladder neck.

Wein AJ: Neuromuscular dysfunction of the lower urinary tract and its management, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 26, pp 976-977.

Question #65 ANSWER=D

This patient has chancroid. The drug of choice is erythromycin 500 mg p.o. q.i.d. for seven days or ceftriaxone 250 mg I.M. once. The other antibiotics will not be effective to eliminate the organism which is haemophilus ducreyi. Acyclovir is effective against the herpes virus.

Berger RE, Lee JC: Sexually transmitted diseases: The classic diseases, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 17, p 671.

Question #66 ANSWER=A

The left spermatic vein courses from the internal ring to the renal vein. At the internal ring, the vein is anterior and lateral to the ureter which crosses the iliac vessels. The vein crosses anterior to the ureter in its mid-portion and inserts into the left renal vein medial to the upper ureter. In ligating a varicocele, venous ligation may be carried out within the inguinal canal or intra-abdominally, in which case this anatomic relationship is important to know.

Kabalin JN: Surgical anatomy of the retroperitoneum, kidneys, and ureters, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 1, p 38.

Question #67 ANSWER=D

In the patient with an overactive bladder who does not achieve satisfactory results with maximum tolerable medical therapy the options are sacral neural modulation, bladder augmentation or diversion. Sacral neural modulation is reversible and therefore the best first step. Patients must be able to accurately fill out a voiding diary prior to the procedure. Pelvic floor rehabilitation does have a role in urge incontinence either alone or in conjunction with medical therapy, but is generally used as the first step in treatment. There is no data to support the use of electrical stimulation in the patient who can perform the exercises appropriately. Phenol injections intended to denervate the bladder have been abandoned.

Wein AJ: Neuromuscular dysfunction of the lower urinary tract and its management, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 26, p 931.

Payne CK: Urinary incontinence: Nonsurgical management, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 29, p 1069.

Question #68 ANSWER=B

Approximately 10-20% of dietary ascorbate is metabolized into oxalic acid that is then excreted into the urine. Ascorbic acid in doses of 2 grams daily was shown to increase urinary oxalate by 20-30%, but had no effect on urinary pH, citrate, calcium, or magnesium.

Traxer O, Huet B, Poindexter J, Pak CY, Pearle MS: Effect of ascorbic acid consumption on urinary stone risk factors. J UROL 2003;170:397-401.

Baxmann AC, De O G Mendonca C, Heilberg IP: Effect of Vitamin C supplements on urinary oxalate and pH in calcium stone-forming patients. KI 2003;63:1066-1071.

Question #69 ANSWER=B

Nephrogenic adenoma is a rare benign metaplastic response of urothelium to tissue injury. Most nephrogenic adenomas occur after an inciting event such as surgery, trauma, infection, or in response to calculi. The adenomas will develop months to years after a precipitating event and will usually occur within the bladder but may occur on any urothelial surface including transposed bladder mucosal grafts. The main presentation is hematuria and irritative voiding symptoms, but they can also present as obstructive symptoms or be found incidentally. The endoscopic appearance is that of a papillary exophytic lesion resembling a low-grade TCC. On histological evaluation, nephrogenic adenoma appear as subepithelial tubular structures similar to Henle's loops. Although at one time these lesions were considered to be premalignant in nature, recent studies have been unable to establish a relationship between nephrogenic adenomas and the subsequent development of malignancy. Even though there is no evidence of malignant potential, transurethral resection is recommended together with long-term antibiotic prophylaxis for at least one year after resection. Prolonged antibiotic therapy is suggested due to the frequent finding of UTI as an associated or causative factor. It is controversial regarding whether patients with nephrogenic adenomas should undergo surveillance cystoscopy. Although there is high incidence of recurrence (30-40%) it is feared that repeated cystoscopic evaluations could further traumatize the bladder urothelium leading to an increased incidence of recurrence. Since nephrogenic adenomas are now known to be a benign condition most authorities recommend cystoscopy, only if recurrent gross hematuria and/or irritative or obstructive voiding symptoms develop.

Garcia-Penit J, Orsola A, Parada R, et al: Synchronous nephrogenic adenoma in the bladder and neourethra (bladder mucosa) in a boy. BR J UROL INT 1999;84(1):169-170.

Peeker R, Aldenborg F, Fall M: Nephrogenic adenoma: A study with special reference to clinical presentation. BR J UROL 1997;80(4):539-542.

Question #70 ANSWER=D

Pain from bone anchors can occur in the absence of sling erosion, bone infection, or inflammation. This is an indication for removal of all synthetic material and bone anchors. Removal of the anchors results in resolution of the pain. Fluoroscopy is often needed to localize the bone anchors and orthopedic instruments may be required. It is not worthwhile to look for anchors that are "floating" in soft tissue since they are difficult to locate and rarely cause symptoms.

Clemens Q: Urinary tract erosions after synthetic pubovaginal slings: Diagnosis and management strategy. UROL 2000:56,589-595.

McGuire EJ, Clemens JQ: Pubovaginal slings, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 32, p 1166.

Question #71 ANSWER=D

Treatment with amphotericin may cause rigors, chills, and fever at the time of a test dose or during treatment in 50% of patients. Amphotericin B has been shown to stimulate prostaglandin synthesis, which may account for the infusion related reactions. This may be limited or prevented with ibuprofen or steroids. While this patient may need an additional septic evaluation, these symptoms probably relate to an amphotericin side-effect. The amphotericin should not be stopped.

Wise GJ: Fungal and actinomycotic infections of the genitourinary system, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, chap 22, pp 797-827.

Question #72 ANSWER=B

Desmopressin (DDAVP) is used to prevent surgical bleeding in patients with Hemophilia A (Factor VIII deficiency) and mild forms of von Willebrand's disease (Factor XII deficiency). DDAVP corrects bleeding tendencies by causing increased vasoconstriction, elevating levels of Factor VIII and increasing plasminogen activation. Its major function is an antidiuretic effect impairing water resorption by the distal tubules and collecting ducts. In a normal situation, the half life of DDAVP is two hours, however, the high serum levels caused by intravenous DDAVP coupled by the increased stimulation of endogenous antidiuretic hormone (ADH) release from the posterior pituitary by physiologic stress, postoperative pain, and by some anesthetics and analgesics can result in persistently high levels of DDAVP for one to four days after surgery. This may result in the development of symptomatic hyponatremia up to four days postoperatively.

Pruthi RS, Kay J, Vick R: Desmopressin induced hyponatremia and seizures after laparoscopic radical nephrectomy. J UROL 2002;168:187.

Question #73 ANSWER=A

A weight gain of up to 8 grams for a 24-hour pad test is considered normal. If the patient only leaked 2 grams, she either does not have significant stress incontinence or she did not do her usual activities that cause her to have stress incontinence during the pad test. Patients who do not leak during the exam, urodynamics, or during a pad test are unlikely to improve with any of the other treatment options noted.

Blaivas JG, Groutz A: Urinary incontinence: Pathophysiology, evaluation, and management overview, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 27, p 1039.

Question #74 ANSWER=C

All the antibiotics listed including most tetracyclines, except doxycycline, are excreted primarily in the urine and their blood levels increase in the presence of renal insufficiency. Doxycycline is excreted mainly in the feces and does not require consideration for a dosage reduction in an azotemic patient.

Standiford HC: Tetracyclines and chloramphenicol, in Mandell GL, Bennett JE, Dolin R (eds): MANDELL, DOUGLAS, AND BENNETT'S PRINCIPLES AND PRACTICE OF INFECTIOUS DISEASES, ed 5. Philadelphia, Churchill-Livingstone, 2000, p 339.

Question #75 ANSWER=B

Magnesium depletion occurs with diuretic use, diabetic ketoacidosis, alcoholism and prolonged nasogastric suction. The latter is associated with hyperchloremic metabolic acidosis. For reasons that are not clear, this eventually results in hypocalcemia and hypomagnesemia. When hypokalemia is associated with hypomagnesemia, potassium replacement cannot be accomplished until magnesium is replenished. Hypomagnesemia is one of the chief causes of inability to replenish body stores of potassium associated with prolonged nasogastric suction. If not corrected, the first clinical appearance of hypomagnesemia will lead to an alteration in mental status and seizures.

Blumenfeld JD, Vaughan ED Jr: Renal physiology and pathophysiology, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 6, p 191.

Question #76 ANSWER=A

As long as renal function is at a steady state, 24 hour excretion of creatinine should be approximately 1 gm per day in a patient of this size. A specimen with only 0.5 gm of creatinine in a patient with chronic but stable renal insufficiency suggests an incomplete timed collection.

Blumenfeld JD, Vaughan ED Jr: Renal physiology and pathophysiology, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 6, pp 169-227.

Question #77 ANSWER=C

Suboptimal approaches to testicular neoplasms including scrotal orchiectomy, transscrotal biopsy or fine needle aspiration occurs in 4% to 17% of cases. Patients treated with full-dose platinum based chemotherapy should have the spermatic cord stump removed at the time of RPLND, however, given the relative absence of local relapse after systemic treatment, extensive groin dissection or hemiscrotectomy is not required. In patients with low-stage NSGCT (not receiving systemic chemotherapy), the scrotal scar should be widely excised with the spermatic cord remnant at the time of RPLND. Patients with clinical stage I NSGCT's and scrotal violation have been excluded in series evaluating surveillance.

Sheinfeld J, McKiernan J, Bosl GJ: Surgery of testicular tumors, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 82, pp 2920-2944.

Question #78 ANSWER=E

The half life of AFP is approximately five days. Hence, the fall in AFP in this patient would not be normal if the only source of AFP were the tumor that was totally excised. On the other hand, the progressive drop suggests there are no metastases. Fetuses and neonates also produce AFP and the values cited are normal in infants, in whom AFP is elevated above normal values (< 10 ng/dl) until eighteen months of life.

Brewe JA, Tank ES: Yolk sac tumors and alpha-fetoprotein in first year of life. UROL 1993;42:79-80.

Ritchey M: Pediatric urologic oncology, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 70, pp 2495-2497.

Question #79 ANSWER=A

The anti-anabolic activity of tetracycline can cause a rise in BUN. For patients with normal renal function this is not a problem, but patients with markedly reduced renal function can suffer toxic side effects due to the retained urea and phosphate. Therefore, tetracycline should not be utilized in patients with a significantly elevated BUN.

Blumenfeld JD, Vaughan ED Jr: Renal physiology and pathophysiology, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 6, p 167.

Question #80 ANSWER=D

Testicular microlithiasis (TM) or polytopic intratubular calcifications is usually an incidental finding during investigation of unrelated testicular symptoms by scrotal sonography. TM is more frequent in undescended testes. TM has been found in infertile men. TM is most commonly associated with nonseminomatous germ cell tumors. The association between TM and testicular CIS has been well-documented. High frequency transducers (7.5 or 10 MHz) are necessary to visualize small hyperechoic foci. Acoustic shadowing is not seen, probably because of the small size of the calcifications. The classic description of TM is bilateral, evenly distributed bright echoes. Studies of Army recruits suggest that the prevalence of TM may be as high as 7% in normal men. Testicular biopsy is not recommended. Chromosomal analysis is only performed if clinically indicated (azoospermia or body habitus suggestive of Klinefelter's syndrome).

Richie JP, Steele CS: Neoplasms in the testis, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 81, p 2876.

Question #81 ANSWER=C

Approximately 1% of children with unilateral Wilms' tumor develop contralateral disease. Children younger then 12 months diagnosed with Wilms' tumor who also have nephrogenic rests, in particular perilobar nephrogenic rests, have a markedly increased risk of developing contralateral disease. These children require frequent and regular surveillance for several years.

Coppes MJ, Arnold M, Beckwith JB, Ritchey ML, et al: Factors affecting the risk of contralateral Wilms' tumor development: A report from the National Wilms' Tumor Study Group. CANCER 1999;85:1616-1625.

Question #82 ANSWER=A

Renal excretion is a significant mechanism for the elimination of enoxaparin. Patients with a creatinine clearance of less than 30 ml/min have an area under the curve (AUC) twice the normal population. Since the PTT is not affected by enoxaparin, this drug must be used with extreme caution in patients with renal impairment. Anticoagulant activity of enoxaparin can be monitored by measuring factor Xa inhibition.

Goldhaber SZ: Pulmonary thromboembolism, in Kasper DL, Braunwald E, Fauci AS, Hauser SL, Longo DL, Jameson JL (eds): HARRISON'S PRINCIPLES OF INTERNAL MEDICINE, ed 16. New York, McGraw-Hill, 2005, chap 244, p 1563.

Question #83 ANSWER=D

Osteoporosis is a recognized risk of long-term androgen ablation and has been shown to have significant clinical impact. Men started on LHRH agonists should receive annual bone density scans and regular calcium and vitamin D supplements. Treatment of osteoporosis if it develops may be done with bisphosphonates, but the ideal type of therapy is not proven. Prophylactic monthly zoledronate (Zometa) has been shown to prevent bone-related events only in men with documented bony metastases. It is also very costly. Less frequent zoledronate administration is currently under study.

Ross RW, Small EJ: Osteoporosis in men treated with androgen deprivation therapy for prostate cancer. J UROL 2002;167:1952 1956.

Question #84 ANSWER=E

The most common cause of post-obstructive diuresis is the physiologic elimination of water, sodium, and urea. The latter can promote an osmotic diuresis. A persistent diuresis may occur as consequence of a renal concentrating defect. The latter is thought to be due to a disturbance of the aquaporin channels in the collecting duct. Atrial natriuretic factor levels are typically increased, but resistance to this peptide is not present.

Gulmi FA, Felson D, Vaughan ED Jr: Pathophysiology and urinary tract obstruction, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 12, pp 451-456.

Question #85 ANSWER=B

The most serious side effect of desmopressin is water intoxication resulting in hyponatremic seizures. The mechanism of the hyponatremia is related to a large fluid intake at night. It is recommended that patients do not take more than 8 ounces of fluid on any night that desmopressin is administered. However, desmopressin has not been found to be effective for geriatric incontinence and given the high prevalence of contraindications and the expense, experts recommend that that use of desmopressin in the elderly await further studies.

Resnick NM, Subbarao VY: Geriatric incontinence and voiding dysfunction, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 36, p 1218.

Question #86 ANSWER=D

There are proponents of surveillance for patients with testicular seminoma because of potential secondary malignancy after radiation (especially leukemia, lymphoma). In a patient with clinical

Stage I disease (negative CT scan and negative tumor markers), surveillance may be a reasonable option. However, there remains an approximately 15% risk of retroperitoneal lymph node relapse. This risk can be completely eliminated by the administration of retroperitoneal radiation therapy. Because of the low dosage of radiation therapy administered, the morbidity of this treatment is limited and, for that reason, most urologists and oncologists still recommend irradiation for clinical Stage I disease. The risk of pulmonary relapse is relatively low, and it would be uncommon for such a patient to relapse with nonseminomatous elements.

Richie JP, Steele CS: Neoplasms in the testis, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 81, p 2876.

Question #87 ANSWER=E

Lithium inhibits vasopressin action in the collecting duct. Complications of lithium carbonate treatment also include interstitial nephropathy. Amiloride can reduce lithium-induced polyuria. Diuretics often stimulate vasopressin release by their volume depletion. Alcohol is a potent inhibitor of ADH release with a consistent dose response relationship.

Blumenfeld JD, Vaughan ED Jr: Renal physiology and pathophysiology, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 6, p 167.

Question #88 ANSWER=B

The best characterized mechanism by which alpha-1-blockers rapidly reduce symptoms of BPH is by blocking sympathetic adrenergic regulation of proximal urethral and prostatic smooth muscle tone. Another mechanism mediating the effect is the induction of prostate apoptosis. Alpha-1-blockers have no effect on the distal urethral sphincter or prostatic cell proliferation.

Chon JK, Borkowski A, Partin AW, et al: Alpha-1-adrenoceptor antagonists terazosin and doxazosin induce prostate apoptosis without affecting cell proliferation in patients with benign prostatic hyperplasia. J UROL 1999;161:2002-2008.

Question #89 ANSWER=E

Patients with Stage III seminomatous tumor should receive cis-platinum based chemotherapy. Radiation therapy should not be utilized as the initial treatment in patients with Stage III seminomas, as the radiation therapy may diminish bone marrow reserves and preclude effective chemotherapy. The options of radiation therapy or resection remain open for residual masses following combination chemotherapy.

Richie JP, Steele CS: Neoplasms in the testis, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 81, p 2876.

Question #90 ANSWER=A

Following a bilateral nephrectomy, fluid management should center on replacement of insensible loss from the lungs and skin. This accounts for approximately one-third of maintenance requirements. Additional replacement may be required to keep up with third spacing and should be replaced as a slow NS slow bolus. Additional free water and salt replacement will not be cleared and can result in the need for dialysis.

Hensle TW, Kearney MC: Fluids, electrolytes, and nutrition, in Gearhart JP, Rink RC, Mouriquand PDE (eds): PEDIATRIC UROLOGY. Philadelphia, WB Saunders Co, 2001, chap 5, pp 51-58.

Question #91 ANSWER=D

The synthesis of aldosterone is increased by either increased angiotensin II or elevated serum potassium. Increased sodium decreases aldosterone. Aldosterone is produced in the zona glomerulosa and not under direct control of ACTH.

Blumenfeld JD, Vaughan ED Jr: Renal physiology and pathophysiology, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 6, p 167.

Question #92 ANSWER=A

The association of bilateral testis tumors with congenital adrenal hyperplasia (CAH) and the remission of both endocrine manifestations and tumors after appropriate glucorticoid treatment call attention to these unusual and sometimes misdiagnosed lesions. Whether they represent neoplasms or hyperplasia and whether they derive from normal adrenal rests or interstitial cells remain uncertain. Nevertheless, these lesions are primarily dependent on ACTH for growth and steroid secretion. The most likely explanation is that they arise from the adrenocortical rests that may occur normally in the testis but that are abnormally stimulated in inadequately controlled CAH. Recognition of CAH and its association with bilateral testicular "tumors" coupled with appropriate medical treatment may obviate unnecessary surgical treatment.

Richie JP, Steele CS: Neoplasms in the testis, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 81, pp 2876-2919

Question #93 ANSWER=D

Renal calcification in the newborn usually occurs in preterm babies with hyaline membrane disease who require furosemide for diuresis; this produces hypercalciuria as a side effect. Renal function is generally normal or minimally reduced. Discontinuing furosemide therapy, by reducing calcium excretion, may actually cause these concretions to dissolve completely.

Karlowitz MG, Adelman RD: Renal calcification in the first year of life. PED CLIN N AM 1995;42:1397-1413.

Roy S III, Noe HN: Renal disease in childhood, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 53, p 1833.

Question #94 ANSWER=C

Parathyroid hormone (PTH) directly stimulates calcium reabsorption by the kidney. Approximately 65% of filtered calcium is reabsorbed in the proximal convoluted tubule; less than 10% is reabsorbed in the distal tubule. In the presence of acidosis, calcium binding to albumin and inorganic anions decreases, resulting in a net increase in calcium excretion. Calcium reabsorption is linked to sodium reabsorption and hence is increased in the presence of decreased extracellular fluid volume. Phosphate depletion decreases calcium reabsorption. Furosemide is a loop diuretic that inhibits calcium absorption.

Blumenfeld JD, Vaughan ED Jr: Renal physiology and pathophysiology, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 6, pp 169-227.

Question #95 ANSWER=E

The hemostatic effect of YAG, argon, or KTP lasers make them extremely effective for the treatment of bladder hemangiomas. In the setting of multifocal lesions, it would be the treatment of choice. Intravesical alum has been used for hemorrhagic cystitis but will not ablate hemangiomas. Simple cystectomy could be considered for life-threatening bleeding. Radiation has no proven efficacy in this setting.

Malkowicz SB: Management of superficial bladder cancer, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 77, p 2785.

Dunshee CJ, Shanberg AM: Benign diseases of the bladder, in Smith JA, Stein BS, Bension H (eds): LASERS IN UROLOGIC SURGERY, ed 3. St. Louis, Mosby Year Book, 1994, p 102.

Question #96 ANSWER=D

Spina bifida occulta is found incidentally on approximately 10% of films imaging the lower spine. In a patient without continuous voiding complaints who has a normal bladder that empties to completion, spina bifida occulta is an x-ray finding without clinical significance. Further evaluation is unnecessary. This entity should be differentiated from occult spinal dysraphism. Occult spinal dysraphism is a term applied to the diagnosis of a tethered cord secondary due to either a tight filum terminale, diastematomyelia, lipomeningocele or dermal sinus tract. Abnormal sacral cutaneous findings occur in 90% of patients and abnormal lumbosacral bony abnormalities are present in 99% of patients with occult spinal dysraphism.

Wraige E, Borzyskowski M: Investigation of daytime wetting: when is spinal cord imaging indicated? ARCH DIS CHILD 2002;87(2):151-155.

Cornette L, Verpoorten C, Lagae L, et al: Tethered cord syndrome in occult spinal dysraphism: Timing and outcome of surgical release. NEUROL 1998;50(6):1761-1765.

Question #97 ANSWER=A

Serum testosterone concentration is most related to sexual interest or libido rather than to erection, emission, or ejaculation. A surprising number of individuals who have had a bilateral orchiectomy retain the ability to have erection. Bilateral orchiectomy does not cause a significant change in serum prolactin.

Lue TF: Physiology of penile erection and pathophysiology of erectile dysfunction and priapism, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 45, p 1591.

Question #98 ANSWER=A

The effectiveness of intravesical mitomycin-C as prophylaxis to decrease recurrences has been studied in a multitude of randomized studies. The majority of studies confirm the short-term benefit of mitomycin-C in reducing recurrences following resection by 40%. As with other agents, the efficacy decreased as follow-up increases. A Medical Research Council trial, which included 447 patients with superficial bladder cancer, was performed to evaluate the effects of a single postresection dose or multiple post-resection doses of mitomycin-C. After a median follow-up of seven years, a 20% sustained decrease in recurrence rate was noted in the mitomycin-C treated group over control. However, no significant difference was observed between patients who received a single post-resection dose of mitomycin-C and those who received multiple doses. A combined analysis of six randomized studies with mitomycin-C noted an overall 9% benefit in recurrences, with only two studies demonstrating a significant reduction. Systemic complications of intravesical mitomycin-C are uncommon and related to its larger molecular weight, which leads to poor absorption. Most complications associated with mitomycin-C are local in nature and consist of irritative symptoms related to the development of chemical cystitis. None of the other agents listed have been shown to be efficacious in the immediate postresection period. BCG is absolutely contraindicated in the postresection period due to the risk of absorption and sepsis, and keyhole limpet hemocyanin may have a similar intense inflammatory reaction in the early post-operative period. Other chemotherapy agents such as thiotepa and epirubicin have also been studied with efficacy similar to that of mitomycin-C in the immediate postresection period. Gemcitabine is under investigation in this setting.

Malkowicz SB: Management of superficial bladder cancer, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 77, p 2785.

Question #99 ANSWER=D

This condition is complete androgen insensitivity syndrome (CAIS), previously described as testicular feminization. The incidence ranges between 1 in 20,000 to 64,000. Patients have normal female external genitalia but an absent vagina. An inguinal hernia is found in 50% of the patients with CAIS and it is reported that 2-5% of all inguinal hernias in prepubertal girls are associated with this disorder. Classically patients with CAIS come to attention due to either a testis found in the inguinal hernia sac at the time of inguinal herniorrhaphy or with complaints of primary amenorrhea. If a testicle is incidentally found in a hernia sac, it should be biopsied and placed back in the abdomen. A complete workup for a intersex disorder is then performed. If CAIS is confirmed, a delayed bilateral orchiectomy should be performed due to the high risk of testicular malignancy.

Diamond DA: Sexual differentiation: Normal and abnormal, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 68, pp 2417-2418.

Question #100 ANSWER=A

The accommodation of the bladder to increasing volumes of urine is primarily a passive phenomenon dependent on the intrinsic properties of the vesical smooth muscle and the quiescence of the parasympathetic efferent pathway. Stimulation of beta-2 and beta-3 adrenergic receptors in the detrusor muscle results in the direct relaxation of the detrusor smooth muscle.

Chancellor MB, Yoshimura N: Voiding function and dysfunction, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 23, p 831.

Question #101 ANSWER=B

Fluorescence in-situ hybridization (FISH) is a hybridization technique with fluorescent labeled DNA probes to detect cells with the most relevant chromosomal abnormalities involved in the pathogenesis of bladder cancer. It is a complex test done in the laboratory that requires a well-controlled technique to insure accurate test interpretation in clinical practice. It has been clearly shown to be more sensitive than urinary cytology but is more costly. Another cellular staining technique for bladder tumor detection, the ImmunoCyt test, uses three monoclonal antibodies to detect mucin antigens and a high molecular weight form of CEA expressed in the cytoplasm of bladder cancer cells.

Sarosdy MF, Schellhammer P, Bokinsky G, et al: Clinical evaluation of a multi-target fluorescent in situ hybridization assay for detection of bladder cancer. J UROL 2002;168:1950-1954.

Question #102 ANSWER=A

Although prophylactic antibiotics may decrease, but not eliminate, bacteruria in the short term, the actual benefit of such antibiotic use is unproven. A study of 15 children on nitrofurantoin prophylaxis demonstrated a small decrease in bacteriuria (74 percent placebo vs. 65 percent treated); however, the organism responsible for bacteriuria shifted to resistant organisms such as Klebsiella and Pseudomonas.

Shortliffe LMD, Shinghal R, Seto EH: Pediatric urinary tract infections, in Gearhart JP, Rink RC, Mouriquand PDE (eds): PEDIATRIC UROLOGY. Philadelphia, WB Saunders Co, 2001 chap 16, p 240.

Question #103 ANSWER=E

Recruitment of C fiber (unmyelinated "silent" axons) occurs in the context of various painful bladder conditions as well as in response to intravesical administration of such substances as high potassium, low pH, high osmolality solutions and irritants such as capsaicin. These fibers are normally mechanoinsensitive, but may become nociceptive as a new functional afferent pathway from conditions or exposures that lead to their sensitization. Under normal conditions, A-delta fibers (finely myelinated axons) discharge in response to bladder fullness, and C fiber volume sensors respond to stretch.

Chancellor MB, Yoshimura N: Voiding function and dysfunction, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 23, pp 831-886.

Question #104 ANSWER=E

Among patients with invasive bladder cancer, MVAC chemotherapy will result in a complete pathologic response in 20% of patients prior to cystectomy. However, between 20-30% of patients with a clinical response will harbor residual invasive disease at the time of cystectomy. Accordingly, following chemotherapy this patient should undergo a cystoprostatectomy. There is no role for additional intravesical therapy in this patient. In addition, it would be inappropriate to place him on a surveillance protocol.

HB Grossman, RB Natale, CM Tangen, et al: Neoadjuvant chemotherapy plus cystectomy compared with cystectomy alone for locally advanced bladder cancer. NEJM 2003;349:859-866.

Schoenberg M: Management of invasive and metastatic bladder cancer, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 78, p 2803.

Question #105 ANSWER=C

Sixteen percent of children with sacral agenesis have a diabetic mother, and it is estimated that the risk of an insulin-dependent mother having a child with sacral agenesis is 1%. Experimental work implicates insulin-like growth factor antibodies as an important factor in sacral agenesis. Folic acid deficiency is associated with neural tube defects.

Bauer SB, Koff SA, Jayanthi VR: Voiding dysfunction in children: Neurogenic and non-neurogenic, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 64, pp 2231-2260.

Question #106 ANSWER=A

In urologic patients, prolonged surgery in the exaggerated lithotomy or the flank position has been associated with rhabdomyolysis and acute renal failure. A high serum creatinine phosphokinase (CPK) establishes the diagnosis when there is a discrepancy between the dipstick hemoglobin and microscopic appearance of RBC on urinalysis. Myoglobin in the urine results in a positive dipstick for blood.

McDougal WS: The kidney, in Gillenwater JY, Grayhack JT, Howards SS, Mitchell ME (eds): ADULT AND PEDIATRIC UROLOGY, ed 4. Philadelphia, Lippincott Williams & Wilkins, 2002, vol 1, chap 14, p 579.

Question #107 ANSWER=C

This patient has symptomatic left hydronephrosis three weeks following cystectomy and urinary diversion. The obstruction is at the level of the ureterointestinal anastomosis. In the early post-op period, it is usually related to edema. In this setting, placement of antegrade ureteral catheter will allow for internalization of the renal drainage with a high rate of success. In the event that stenting alone is not sufficient, an endoscopic balloon dilation or incision would be facilitated by placement of the initial ureteral stent for four to six weeks. Given the patient's symptoms, observation alone will not improve the situation and symptoms are likely to worsen. Cystoscopy risks damaging the urethral anastomosis and will likely not allow for identification of the ureteral orifices thus preventing stent placement from below. Because the most likely cause is edema in this early setting, more aggressive procedures such as endoscopic incision or open revision are not recommended.

Ginsberg DA, Rovner ES, Raz S: Complications of continent urinary diversion, in Taneja S, Smith R, Ehrlich R (eds): COMPLICATIONS OF UROLOGIC SURGERY, PREVENTION AND MANAGEMENT. Philadelphia, WB Saunders Co, 2001, chap 39, pp 454-467.

Question #108 ANSWER=C

Antenatally discovered VUR seems to be different from VUR discovered in a symptomatic older child. It is most commonly seen in males and is associated with high pressure voiding due to increased urethral resistance that resolves with time. Severe renal damage is more often seen in males with grade V VUR. The majority of kidneys with grades I - IV VUR show normal function and morphology. When renal damage occurs it is usually a global reduction of renal parenchyma. Resolution rates in antenatally discovered VUR are the same and possibly slightly better than that discovered in older symptomatic children.

Atala A, Keating MA: Vesicoureteral reflux and megaureter, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 59, pp 2053-2054.

Peters CA: Perinatal urology, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 51, pp 1781-1811.

Question #109 ANSWER=C

Revascularization to preserve renal function in patients with atherosclerotic renal artery stenosis will most likely benefit those who have not yet sustained permanent global impairment of renal function. Complete occlusion of the renal artery does not necessarily preclude intervention, since renal viability may be maintained through the presence of collateral arterial supply. The Cleveland Clinic group has found that 89% of such patients with initial serum creatinine < 3.0 mg/dl could be expected to have stable or improved renal function after revascularization. However, renal biopsy to evaluate the severity of renal parenchymal involvement as a guide to revascularization was found to be helpful only if the initial serum creatinine exceeded 4.0 mg/dl. In addition to the absolute level of renal function, the rate of decline of renal function is an important determinant of outcome after intervention. Duration of hypertension does not predict recoverability in this setting.

Novick AC, Fergany A: Renovascular hypertension and ischemic nephropathy, in Walsh PC, Retik AB, Vaughan ED, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, pp 229-271.

Question #110 ANSWER=E

Continent neobladder reconstruction has been performed in women with bladder cancer and requires dividing the urethra just distal to the bladder neck. Tumor invasion at the bladder neck or directly into the anterior vaginal wall is a predictor of urethral tumor, and thus a contraindication for the procedure. Older women have a higher risk of incontinence, but age alone is not a contraindication. Many series in men have shown that continent diversion is still acceptable in the face of positive lymph nodes. UTI and hydronephrosis have no implication for selection for type of diversion.

Stein JP, Skinner DG: Orthotopic urinary diversion, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 108, pp 3845-3847.

Question #111 ANSWER=D

Microscopic asymptomatic hematuria is a common problem of childhood. Further imaging is most likely to be nonproductive and at this point a repeat evaluation with urine analysis in one year and blood pressure measurement is the best advice.

Roy S III, Noe HN: Renal disease in childhood, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 53, p 1833.

Question #112 ANSWER=C

High velocity injury to a portion of the urinary tract is frequently associated with laceration and a blast effect that produces significant loss of much of the tissue surrounding the missile tract. Widespread debridement must be carried out. Immediate reconstruction is appropriate with reimplantation into the bladder since this will provide adequate ureteral drainage and a tension-free anastomosis. While placement of nephrostomy tube and delayed reconstruction is an option, this is not the best treatment for this patient.

Brandes SB, McAninch JW: Reconstructive surgery for trauma of the upper urinary tract. UROL CLIN N AM 1999;26:183-199.

Question #113 ANSWER=A

Urethral recurrence following orthotopic neobladders is rare, generally less than 5% due to careful screening of the prostatic urethra prior to diversion. Successful management of superficial recurrences, especially CIS with BCG have been reported. Urethrectomy is reserved for invasive or BCG refractory lesions.

Huguet J, Palou J, Serrallach M, et al: Management of urethral recurrence in patients with studer neobladder. EUR UROL 2003;43:495-498.

Stein JP, Skinner DG: Orthotopic urinary diversion, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 108, p 3835.

Question #114 ANSWER=E

MAG-3 is an excellent isotope for cortical imaging and assessing urinary tract obstruction. Its excretion is dependent on GFR. GFR rapidly changes with normal growth and increases several fold during the first two months of life. Therefore, the optimal timing of the renal scan is during the second month of life.

Chevalier R, Howards SS: Renal function in the fetus, neonate, and child, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 50, pp 1765-1780.

Question #115 ANSWER=B

The only form of urinary tract obstruction that may cause renin-mediated hypertension is acute unilateral ureteral obstruction. Chronic bilateral ureteral obstruction may also cause hypertension, but it is volume related and not associated with hyperreninemia. To establish that obstruction is causing renin-mediated hypertension, divided renal vein renins should show lateralization to the obstructed kidney with suppression of renin output from the normal kidney. A peripheral plasma renin level, even when indexed against the 24-hour urinary sodium, is not a good screening test.

Gulmi FA, Felson D, Vaughan ED Jr: Pathophysiology and urinary tract obstruction, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 12, pp 436-438.

Question #116 ANSWER=E

In general, when comparing the use of colon and ileum for urinary diversion, there are few differences that would favor one over the other except in special circumstances. One of the most common special circumstances is the setting of prior pelvic radiation therapy. In this instance, the use of colon is often favored as it is usually out of the radiated field. Probably because of its larger diameter, the incidence of postoperative bowel obstruction with colon is less than that for ileum. Construction of an antirefluxing anastomosis with a submucosal technique is easier with colon segments. Colon segments can usually reliably be mobilized to reach anywhere in the abdomen or pelvis. Although the same electrolyte abnormalities are possible with either segment, nutritional problems are less with colon when compared to ileum as long as the ileocecal valve is left intact.

McDougal WS: Use of intestinal segments and urinary diversion, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 106, p 3749.

Question #117 ANSWER=D

Antibiotic therapy, particularly for gram-negative bacteremia, is the most important predisposing factor for developing candidemia. Other factors such as steroids, catheters, and immunosuppression from drugs or disease do enhance the chances of fungal infection while on antibiotic therapy.

Wise GJ: Fungal and actinomycotic infections of the genitourinary system, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 22, pp 797-822.

Question #118 ANSWER=B

Open pyeloplasty may result in early or delayed failure. Failure is most likely secondary to an anastomotic stricture. Open pyeloplasty should eliminate the need to exclude an obstructive aberrant renal vessel and as such renal angiography is unnecessary. Ureterocalycostomy might be considered, but only after less invasive treatments. Nephrectomy should be reserved for kidneys with minimal renal function. Balloon dilation is suboptimal therapy. Transmural endopyelotomy whether performed in a retrograde or antegrade approach is the treatment of choice.

Hoenig DM, Shalhav AL, Elbahnasy AM, et al: Impact of etiology of secondary ureteropelvic junction obstruction on outcome of endopyelotomy. J ENDOUROL 1998;12(2):131-133.

Question #119 ANSWER=A

Stomal stenosis is one of the most common long-term complications of ileal conduit diversion. Outlet stenosis leads to increased residual urine and high pressure in the conduit that is transmitted across refluxing ureters to the upper tracts resulting in hydronephrosis and upper tract deterioration. Neither recurrent cancer nor simple postoperative fibrosis are likely to appear suddenly four years after surgery. Chronically ischemic conduits have small volumes and would not retain a residual of 100 cc of urine.

McDougal WS: Use of intestinal segments and urinary diversion, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 106, p 3762.

Question #120 ANSWER=B

The dose for acetaminophen is 10 mg/kg. Therefore, the appropriate dose for this 8 kg child is 80 mg. The infant acetaminophen drops are supplied in 80 mg/0.8 ml. For children age four to eleven months, the recommended dose is 0.8 ml. Overdosage of acetaminophen can cause life threatening hepatic toxicity. In children, an overdosage of less than 150 mg/kg has not been associated with hepatic toxicity.

Joseph D: Formulary, in Gearhart J, Rink R, Mouriquand P (eds): PEDIATRIC UROLOGY. Philadelphia, WB Saunders Co, 2001, p 1046.

Question #121 ANSWER=A

This patient most likely has mild renal obstruction secondary to ureteral edema from the uncomplicated ureteroscopy. There is no suggestion of sepsis. An initial attempt to control the symptoms with analgesics is all that is indicated.

Singal RK, Denstedt JD: Contemporary management of ureteral stones. UROL CLIN N AM 1997;24:59-70.

Question #122 ANSWER=B

This clinical scenario is consistent with a uretero-iliac artery fistula. This has been reported most commonly after ureteral stenting for radiation-induced stricture disease for gynecologic malignancies and after aortoiliac reconstructive procedures. Arteriography may not be diagnostic, but, if it is, temporary balloon occlusion can be life-saving. Laparotomy would be extremely difficult in most previously irradiated patients.

Han KR, Pantuck AJ, Siegel RL, et al: Endovascular stent graft for management of ureteroarterial fistula after orthotopic bladder substitution. TECH UROL 1999;5(3):169-173.

Vandersteen DR, Saxon RR, Fuchs E, et al: Diagnosis and management of ureteroiliac artery fistula: Value of provocative arteriography followed by common iliac artery embolization and extraanotomic arterial bypass grafting. J UROL 1997;158:754-758.

Question #123 ANSWER=C

A Doppler scrotal ultrasound is the most helpful of the above studies to determine the presence of hematocele and if the tunica albuginea of the testicles is intact. These findings will direct further management. If a testicular rupture or hematocele is identified, immediate surgical repair is required. It is imperative to exclude testicular torsion with doppler ultrasonography.

McAninch JW, Santucci RA: Genitourinary trauma, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 105, p 3737.

Question #124 ANSWER=D

Ureteral obstruction can cause a number of deficits in nephron function. The earliest is water reabsorption, thought to be due to defects of aquaporin water channels in the collecting duct. The other transport processes listed may be attenuated, but this occurs after development of a concentrating defect.

Gulmi FA, Felson D, Vaughan ED Jr: Pathophysiology and urinary tract obstruction, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 1, chap 12, p 448.

Question #125 ANSWER=C

This patient most likely has a solitary metastasis of renal cell carcinoma to the opposite adrenal gland. Although the prognosis is poor, some patients will be cured with resection of solitary metastases, and an aggressive surgical approach is indicated. Biopsy may not be diagnostic, and does not obviate excision. The right adrenal can be spared if it appears normal on CT scan, avoiding the need for steroid replacement therapy.

Novick AC, Campbell SC: Renal tumors, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 75, p 2672.

Question #126 ANSWER=B

Following blunt trauma in children, radiographic evaluation of the kidney should be undertaken in the presence of gross hematuria, hypotension, rib or spinal fractures, or signs of intraperitoneal injury. A contrast CT scan with delayed images in order to follow the course of the ureters is the best imaging study to exclude injury.

Morey AF, McAninch JW: Genitourinary trauma, in Belman AB, King LR, Kramer SA (eds): CLINICAL PEDIATRIC UROLOGY. London, Dunitz, 2002, chap 39, p 1248.

Question #127 ANSWER=E

Semen parameters improve to a greater extent after bilateral varicocelectomy as compared to just repairing the dominant varicocele in patients with a Grade II-III varicocele and a contralateral Grade I varicocele. This approach does not extend to patients with a "subclinical" right varicocele (those only detected by Doppler). Transrectal ultrasonography and clomiphene citrate (Clomid) are not indicated in this setting. Intrauterine insemination is another alternative but varicocelectomy is more cost effective.

Scherr D, Goldstein M: Comparison of bilateral versus unilateral varicocelectomy in men with palpable bilateral varicoceles. J UROL 1999;162:85-88.

Question #128 ANSWER=C

Paget's disease of the penis and scrotum is a low-grade malignancy that is often associated with other cancers. The most effective treatment for a large lesion is wide local full-thickness skin excision with grafting. The risk of local recurrence is high, but distant spread is rare. Topical therapy and radiation have not been effective in this disease. Moh's surgery is utilized for smaller, superficial lesions. Penectomy is not necessary in this setting.

Donat SM, Cozzi PJ, Herr HW: Surgery of penile and urethral carcinoma, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 84, p 2983.

Park S, Grossfeld GD, McAninch JW, Santucci R: Extramammary Paget's disease of the penis and scrotum: excision, reconstruction and evaluation of occult malignancy. J UROL 2001;166:2112-2116.

Question #129 ANSWER=B

Cutaneous vesicostomy is a useful form of temporary incontinent urinary diversion and provides low-pressure effective bladder emptying while helping prevent symptomatic UTI. It has not been shown to cause any long term bladder dysfunction. Children with a vesicostomy often void per-urethra as well as drain urine through the vesicostomy.

Rink RC, Cain MP: Urinary diversion, in Belman AB, King LR, Kramer SA (eds): CLINICAL PEDIATRIC UROLOGY, ed 4. London, Martin Dunitz Ltd, 2002, chap 17, p 494.

Question #130 ANSWER=E

Bicalutamide is an androgen receptor blocker. Over time, treatment will result in decreased pituitary feedback, and the subsequent rise in LH will result in increased testosterone production. With finasteride, similar effects on LH and testosterone are expected. Finasteride will effectively suppress DHT levels by approximately 80%. Estradiol is formed by the aromatization of testosterone. Increased estradiol production occurs with bicalutamide and may result in gynecomastia. Finasteride only results in minimal increases in estradiol production.

Schlegel PN: Medical management of prostatic diseases, in Schrier RW, Abboud FM, Baxter JM, Fauci AS (eds): ADV INT MED. Chicago, Mosby Year Book, 1994, pp 569-601.

Lepor H, Lowe FC: Evaluation and nonsurgical management of benign prostatic hyperplasia, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 2, chap 39, p 1337.

Question #131 ANSWER=A

Complications of inguinal lymph node dissection can include debilitating lower extremity edema, wound infection, skin flap necrosis, DVT, hemorrhagic events, and sepsis. The greatest risk factor for these complications is palliative indication, primarily patients with advanced disease with impending erosion into the vessels or through the skin. In the series from MD Anderson Cancer Center complication rates (minor and major combined) were 35% for a prophylactic dissection, 36% for a therapeutic dissection, and 67% for palliative indications. In addition, most major complications occurred in the latter group.

Bevan-Thomas R, Slaton JW, Pettaway CA: Contemporary morbidity from lymphadenectomy for penile squamous cell carcinoma: The MD Anderson Cancer Center experience. J UROL 2002;167:1638-1642.

Question #132 ANSWER=B

In this situation, injection with a bulking agent can often make the intermittently leaking stoma dry. If not, revision would be warranted. Usually, there is no reason to replace the appendix. The urodynamics do not suggest a need for bladder augmentation.

Halachmi S, Farhat W, Metcalfe P, et al: Efficacy of polydimethylsiloxane injection to the bladder neck and leaking diverting stoma for urinary continence. J UROL 2004,171:1287-1290.

Question #133 ANSWER=C

Cushing syndrome implies glucocorticoid excess while Cushing disease is glucocorticoid excess specifically due to a pituitary adenoma. Approximately 80% of patients with Cushing syndrome have hypertension at the time of presentation. Glucocorticoids have weak mineralocorticoid effects resulting in retention of salt and water. With excessive glucocorticoid production these weak mineralocorticoid effects can cause hypertension. Plasma catecholamines are typically not elevated.

Vaughan ED Jr, Blumenfeld JD, Del Pizzo J, Schichman SJ, Sosa RE: The adrenals, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 101, p 3507.

Question #134 ANSWER=C

High grade TCC of the ureter is best treated with nephroureterectomy because of the high risk of local recurrence with excision only. Ureterectomy alone is only indicated in the face of a functionally solitary kidney. Endoscopic management is only appropriate for low-grade lesions, given the strong association of high grade and advanced stage.

Messing EM: Urothelial tumors of the urinary tract, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 76, p 2732.

Question #135 ANSWER=A

This patient has the clinical history and physical findings of a ruptured augmented bladder. Although the initial cystogram does not reveal extravasation of contrast, this does not exclude the diagnosis of bladder rupture. Because this patient appears toxic with symptoms consistent with a ruptured bladder, further evaluation is warranted. A CT cystogram is indicated as it is the most sensitive diagnostic test for extravasation. Conservative management has been employed in some children with bladder rupture, but most require laparotomy for treatment.

Adams MC, Joseph DB: Urinary tract reconstruction in children, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 71, pp 2508-2563.

Question #136 ANSWER=B

The frequency of ureteral injuries from penetrating trauma is low. These injuries may be difficult to detect because the IVP is either normal or indeterminate in approximately 70% and hematuria may be absent in up to 45%. Retrograde ureteropyelography or injection of dyes may miss such injuries because the blast injury often results in delayed sloughing. A high index of suspicion is necessary for diagnosis and the most accurate method is ureteral exploration.

Brandes SB, Chelsky MJ, Buckman RF, Hanno PM: Ureteral injuries from penetrating trauma. J TRAUMA 1994;36:766-769.

Medina D, Lavery R, Ross SE, Livingston DH: Ureteral trauma: preoperative studies neither predict injury nor prevent missed injuries. JACS 1998;186:641-644.

Question #137 ANSWER=A

Hypogonadism is a major risk factor for osteoporosis, presumably from the loss of androgens and loss of conversion of testosterone to estrogens which appear to be protective against bone mineral loss. Consequently, osteoporosis is among one of the most serious complications of androgen deprivation therapy (ADT) in men with advanced prostate cancer. Men with prostate cancer on ADT lose 6.5-17.3% more bone than age matched controls, and the risk of fracture is increased 4.0-12.5%. Fractures occurred after an average of 28 months of ADT in one study, but osteoporosis may develop after as little as nine months of therapy. In this patient, all therapies listed except bicalutamide (or any other antiandrogen) will result in castrate levels of testosterone and will result in further bone mineral loss and increase risk of bone fracture. Conversely, bicalutamide monotherapy has not been associated with osteoporosis. Despite this potential advantage, the efficacy of bicalutamide monotherapy is unproven.

Krupski TL, Smith MR, Chan Lee W, et al: Natural history of bone complications in men with prostate carcinoma initiating androgen deprivation therapy. CANCER 2004;101(3):541-549.

Smith R, Fallon MA, Goode MJ: Cross-sectional study of bone turnover during bicalutamide monotherapy for prostate cancer. UROL 2003;61:121-131.

Question #138 ANSWER=A

Early developmental arrest of the urorectal septum in the male will produce a high supralevator type of imperforate anus that often leads to communication between the rectum and the prostatic urethra. Bacterial contamination across this fistula may cause recurrent UTIs and patients may require prophylactic antibiotics. Neurogenic bladder occurs in about 10% of cases as a result of lumbosacral spine anomalies or from injury during pull-through surgery. VUR may be associated with this anomaly but it does not actually cause UTI.

Bauer SB, Koff SA, Jayanthi VR: Voiding dysfunction in children: Neurogenic and non-neurogenic, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 64, pp 2231-2260.

Question #139 ANSWER=D

Vascular complications of laparoscopy are relatively uncommon but can be life-threatening. Complications most commonly occur during Veress needle or peri-umbilical trocar placement. They are likely to affect either the right iliac artery, left iliac vein or inferior vena cava because of their location under the umbilicus. Pulsatile bleeding suggests an arterial source.

Chapron CM, Pierre F, Lacroix S, Querleu D, et al: Major vascular injuries during gynecologic laparoscopy. J AM COLL SUR 1997;185:461-465.

Geers J, Holden C: Major vascular injury as a complication of laparoscopic surgery: A report of three cases and review of the literature. AM SUR 1996;62:377-379.

Question #140 ANSWER=C

The finding of a papillary lesion at the ureteral margin needs further evaluation to fully ascertain the extent of tumors in the system prior to planning the correct therapy. An on the table flexible ureteroscopy would thus be useful in detecting more proximal tumors which if present may necessitate more extensive surgery. If only CIS or dysplasia is present, intraoperative endoscopy is not indicated, because visual identification of CIS is unlikely.

Messing EM: Urothelial tumors of the urinary tract, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 76, pp 2765-2773.

Question #141 ANSWER=C

The corporal bodies are surrounded by tunica albuginea. Buck's fascia surrounds the corpora cavernosa and corpus spongiosum. If the injury to the urethra is contained within Buck's fascia the hematoma will remain confined to the shaft of the penis. Rupture through Buck's fascia leads to extension of the hematoma into the scrotum. The classic presentation of a urethral injury contained within Colles' fascia is that of a butterfly hematoma of the perineum. Superiorly the extravasation can extend to the clavicles where Scarpa's fascia, the abdominal extension of Colles' fascia, attaches.

Brooks J: Anatomy of the lower urinary tract and male genitalia, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 2, p 43.

Question #142 ANSWER=B

The cortical rim sign is usually a sign of renal arterial injury. Contrast enhancement of the cortical rim is due to collateral blood flow without enhancement of the parenchyma.

Kamel IR, Berkowitz JF: Assessment of the cortical rim sign in posttraumatic renal infarction. J COMPUT ASSIST TOMOG 1996;20:803-806.

McAninch JW, Santucci RA: Genitourinary trauma, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 105, p 3710.

Question #143 ANSWER=E

This patient has metastatic disease, and in light of the solitary kidney it is crucial to differentiate renal cell carcinoma from TCC. In either case, the most reasonable approach is systemic therapy rather than nephrectomy and dialysis. If he has a dramatic response to systemic therapy then one could consider nephrectomy at that time. The role of PET scan is still under study in kidney cancer, but a positive PET is highly suggestive of metastatic disease.

Novick AC, Campbell SC: Renal tumors, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 75, p 2672.

Question #144 ANSWER=A

Children who initially fail an alarm system in the treatment of nocturnal enuresis will benefit from combination therapy: enuretic alarm with pharmacological treatment. Assessment of urine volume and functional bladder capacity by measuring daytime voided urine volume will assist in the choice of pharmacological treatment. Patients with > 70% of estimated functional bladder capacity will have an improved response to DDAVP. Anticholinergic medication is useful in patients with < 70% functional bladder capacity.

Neveus T, Tuvemo T, Lackgren G, Stenberg A: Bladder capacity and renal concentrating ability in enuresis: Pathogenic implications. J UROL 2001;165:2022-2025.

Canning DA: Evaluation of the pediatric urologic patient, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 3, chap 52, p 1812.

Question #145 ANSWER=A

The couple is infertile due to idiopathic male factor. Testicular biopsy is unlikely to be helpful in a patient with oligospermia. Any intervention used in this setting is considered empirical. The main choice is between attempts to improve the husband's fertility or assisted reproductive techniques to improve the chances of conception without altering sperm quality. It is controversial whether Clomid is effective in men with oligospermia but it is definitely not effective in an individual with an elevated serum FSH. This leaves either intrauterine insemination (IUI) or in vitro fertilization (IVF). It is most reasonable to start with IUI in this couple since the wife is under 30 and the husband's total motile sperm count is well above 10 million. IVF would be the first therapeutic option if there were a significant female factor or his sperm count were extremely low.

Burr RW, Siegberg R, Flaherty SP, Wang XJ, et al: The influence of sperm morphology and the number of motile sperm inseminated on the outcome of intrauterine insemination combined with mild ovarian stimulation. FERT STERIL 1996;65(1):127-132.

Cohlen BJ: Should we continue performing intrauterine inseminations in the year 2004? GYNECOL OBSTET INVEST 2005;59(1):3-13.

Question #146 ANSWER=A

Although there are few long-term complete responses using chemotherapy in patients with hormone refractory prostate cancer, objective responses with PSA reductions in approximately 50% to 70% of patients treated with estramustine and vinblastine or mitoxantrone, and docetaxel-based therapy have been reported and demonstrate prolonged survival. Bilateral orchiectomy is of little value in a patient with castrate levels of testosterone. Addition of an anti-androgen in this situation can decrease the serum PSA level temporarily, but is less effective than chemotherapy. Strontium is effective for symptomatic control of bone pain. Steroids occasionally can be useful but usually only if combined with some other therapy such as suramin or ketoconazole.

Eisenberger MA, Carducci MA: Chemotherapy for hormone-resistant prostate cancer, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 95, p 3209.

Tannock IF, Dewit R, Berry WR, et al: Docetaxel plus prednisone or mitoxantrone plus prednisone for advanced prostate cancer. NEJM 2004;351:1502-1512.

Question #147 ANSWER=B

Storage pressures in the bladder of greater than 40 cm H_2O lead to deleterious effects on the upper tracts even in the absence of reflux. "Safe" storage pressures are less than 40 cm H_2O.

A likely cause of high detrusor leak point pressure in children with spina bifida is a denervated external sphincter resulting in fixed urethral resistance.

Kraus SR, Boone TB: Pediatric neurogenic bladder: Etiology and diagnostic evaluation, in Gonzalez ET, Bauer SB (eds): PEDIATRIC UROLOGY PRACTICE. Philadelphia, Lippincott, Williams & Wilkins, 1999, chap 22, pp 365-370.

Question #148 ANSWER=B

Y chromosome microdeletions are common in severe male infertility. Although many men with AZFc deletions are azoospermic, occasional sperm are often found in the ejaculate and may obviate the need for testicular sperm extraction. Renal, prostatic and X chromosome abnormalities are rarely found in association with Y microdeletions.

Reijo R, Alagappan RK, Ratrizio P, et al: Severe oligospermia resulting from deletions of azoospermia factor gene on Y chromosome. LANCET 1996;347:1290-1293.

Girardi SK, Mielnik A, Schlegel PN: Submicroscopic deletions of the Y chromosome in infertile men. HUM REPROD 1997;12:1635-1641.

Question #149 ANSWER=C

Rectal injuries are reported to occur in less than 0.5% of radical prostatectomies. Therefore, routine preoperative bowel preparation is unnecessary. A two layer closure of the rectal wall is sufficient in most cases and digital anal dilation may also be used. If the edges of the rectal wound are devitalized, the patient has received previous pelvic radiation, or there is significant fecal contamination, then a diverting colostomy with Hartmann's pouch should strongly be considered. A mucus fistula is not indicated in the absence of distal obstruction.

Borland RN, Walsh PC: The management of rectal injury during radical retropubic prostatectomy. J UROL 1992;147:905-907.

Eastham JA, Scardino PT: Radical prostatectomy, in Walsh PC, Retik AB, Vaughan ED Jr, Wein AJ (eds): CAMPBELL'S UROLOGY, ed 8. Philadelphia, WB Saunders Co, 2002, vol 4, chap 89, p 3080.

Question #150 ANSWER=B

Preservation of the sacral nerve arcs, as indicated by an intact bulbocavernosus reflex, suggests the potential for detrusor-sphincter dyssynergia. While other parameters may also suggest the presence of intact sacral arcs, the bulbocavernosus reflex is the most clinically specific. Unlike spinal cord injury, in lumbosacral spina bifida neural function cannot be predicted by the level of the lesion.

Pontari MA, Keating M, Kelly M, et al: Retained sacral function in children with high level myelodysplasia. J UROL 1995;154:775-777.